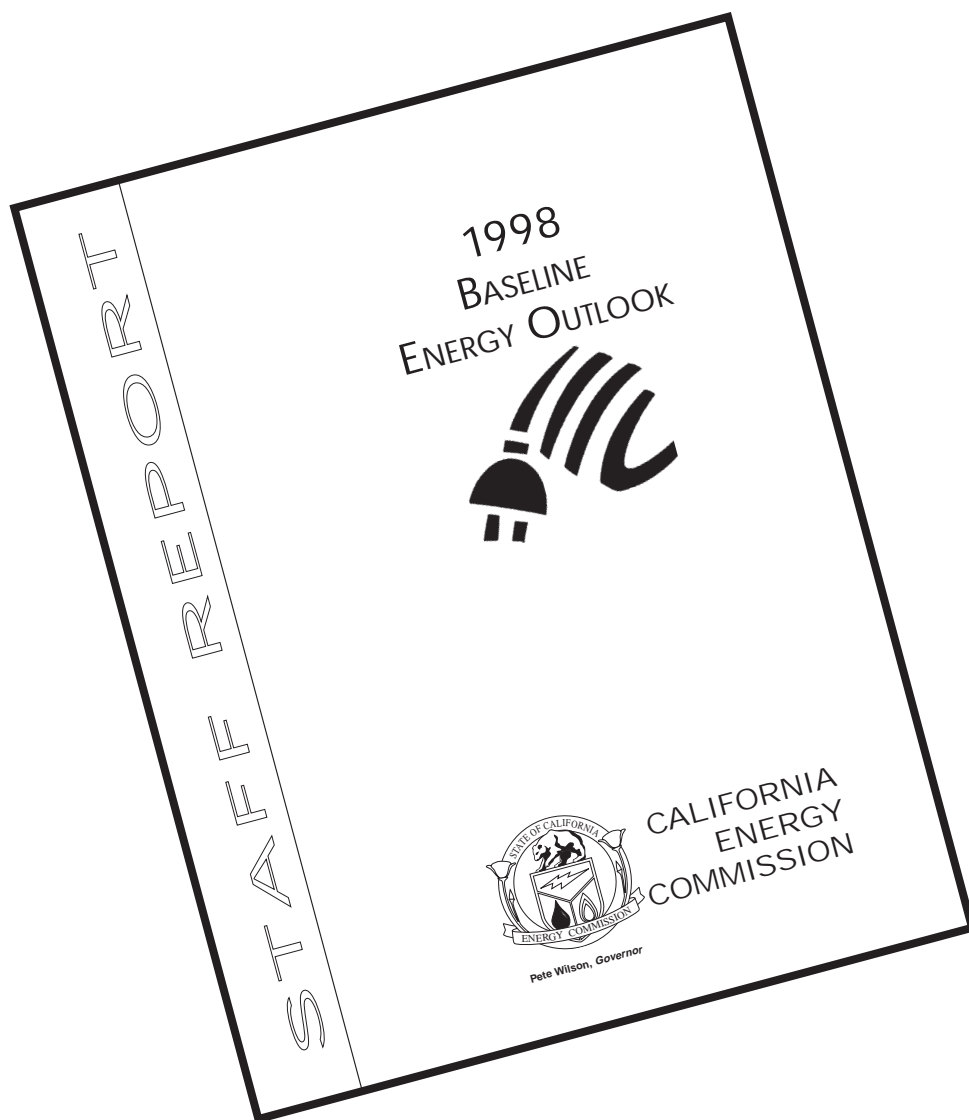


1998 BASELINE ENERGY OUTLOOK



AUGUST 1998
**CALIFORNIA
ENERGY
COMMISSION**



CALIFORNIA ENERGY COMMISSION

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EXECUTIVE SUMMARY

Recent changes in the regulatory structure of California's electricity industry have provided electricity consumers an opportunity to shop around for the best combination of electricity prices and services from utilities and non-utility energy service providers. Similar changes are also expected in the natural gas industry in conjunction with a California Public Utilities Commission proceeding intended to develop new regulatory rules promoting customer choice for natural gas consumers. As an element to our energy monitoring and policy functions, Energy Commission Staff has prepared the *1998 Baseline Energy Outlook*, summarizing an electricity and retail natural gas consumption forecast for California through the year 2007 and considering how restructuring might influence energy consumption patterns in the future. The principal conclusions of this report are the following:

- o Statewide electricity consumption is expected to increase 1.8 percent per year through 2007. The projected growth rate is about half of the annual level experienced during the 1980s and slightly less than the two percent annual rate realized during the four-year period ending in 1997. The commercial sector accounts for the largest share of electricity consumption. Indoor lighting is the largest application of electricity consumption in the commercial market, responsible for about one-third of the total for the sector.
- o Natural gas consumption, not including gas used for electric generation, is expected to increase one percent per year through 2007. The industrial sector, primarily process-related industries, will be responsible for the bulk of the anticipated increase in natural gas demand. Residential customers will continue to comprise the largest share of natural gas consumption in California, with three-fourths of the total driven by space heating and water heating.
- o Electronics and computer related industries are expected to be among the fastest growing industrial energy user groups in California. Much of this increase can be attributed to the increased need for semiconductor cleanrooms, which are highly energy intensive.
- o Kern, San Bernardino, and Riverside Counties will experience the largest percentage increase in electricity growth during the next ten years. Los Angeles will still remain the largest consuming county, accounting for one-fourth of electricity consumption and one-third of natural gas consumption in the state.
- o Since no underlining rate design changes are assumed given the uncertainty surrounding electricity rate reductions in the year 2002 and an implementation date for eventual changes in the natural gas industry, no significant changes in customer energy consumption patterns can be predicted at this time. Future reports will quantitatively assess these uncertainties through a series of sensitivities that will consider the impacts of various rate design approaches, incorporate structural changes to the administration of public funds used for energy efficiency programs, and test varying degrees of price volatility.

INTRODUCTION

California's energy market has undergone dramatic changes since the beginning of 1998. In March, the newly restructured electricity market, in which customers of six of the seven investor owned utilities (IOUs)¹ are now able to procure from a multitude of new providers those energy services (generation, billing, metering) previously only provided by the utilities, commenced operations. This structural change is the end result of a three-year regulatory and legislative review of the electricity market, culminating with the passage of California Assembly Bill 1890 (**AB 1890**)² in September 1996. Besides fostering competition, **AB 1890** also allows utilities a four-year "transition period" to recover the unrecovered portion of investments in assets that would otherwise not be considered economic to operate in a competitive marketplace. Additionally, electricity services (i.e., traditional generation, transmission, and distribution) are frozen at rates that were in effect June 10, 1996. The collection of the competitive transition charge and the rate freeze will continue through March 2002, or until stranded costs have been fully recovered.

The California Public Utilities Commission (CPUC) is presently working with industry representatives to further refine the electricity marketplace. The CPUC is also investigating a similar restructuring effort for the natural gas marketplace, which is intended to provide more service options for natural gas customers.

These changes will clearly have implications for many California energy consumers, who can now shop for the best combination of electricity prices and services from utility and non-utility providers. Changes to overall customer energy consumption patterns during the transition period of utility stranded cost recovery, however, are expected to be minimal due to the rate freeze and its consequence that the general rate structure has not changed. Changes to energy consumption patterns most likely will be caused by fluctuations in the level of statewide economic activity and weather rather than as a direct result of electricity restructuring. Electricity consumption, which declined to some extent for all customer sectors during the recent California recession, has exhibited a resurgence coinciding with the state's economic recovery. In 1997, for example, electricity consumption grew 2.9 percent after increasing 3.5 percent the previous year. Natural gas consumption, affected more significantly by weather conditions, increased 7.2 percent between 1995 and 1996 but declined 2.1 percent between 1996 and 1997, in spite of a robust economy.

¹ Mountain Utilities, formerly Kirkwood Gas & Electric, is not required to provide direct access to its customers from other electricity service providers since it is a small utility not integrated with other utilities' transmission systems.

² **Assembly Bill No. 1890, CHAPTER 854**, Approved by Governor September 23, 1996. Filed with Secretary of State September 24, 1996.

The *1998 Baseline Energy Outlook* summarizes the Energy Commission's electricity and retail natural gas consumption forecasts for California through the year 2007.³ The Energy Commission produced this report as an element of our monitoring and policy functions, recently expressed in the Energy Commission's *Ad Hoc Information Committee Report on the Energy Market Information Proceedings*,⁴ and to provide information to market participants. This forecast was an instrumental part of the Energy Commission's contribution to the Public Utilities Code Section 350 Electricity Reliability study that was released recently. This study combined the efforts of the Independent System Operator (ISO), its contractor, Energy Commission Staff, and other entities to develop an assessment of system reliability. Energy Commission Staff provided several technical assessments including this demand forecast.

The report is organized into the following five sections. The first section discusses the results of Staff's end-use energy consumption forecasts on a statewide basis through 2007. Section two reports consumption patterns by key end-use sectors. Section three considers the impact that electricity and natural gas restructuring might have on energy consumption. Section four summarizes some of the economic and demographic drivers of energy consumption patterns. The final section briefly describes the broad electric planning/service areas and gas service territories, and defines the sectors used in the analysis. A series of tables and figures throughout the text highlight 1997 consumption patterns and three appendices provide specific annual details.

I. STATEWIDE ENERGY CONSUMPTION

With 33 million people, it should come as no surprise that California ranks as one of the largest energy consuming states in the nation. Although the state ranks high in terms of electricity rates, it ranks relatively low with respect to individual residential and commercial energy bills. Several factors explain this phenomenon: California's strong emphasis on energy efficiency, rate design which features ascending block rates, and a mild climate. This relationship has been the focal point of two regulatory restructuring initiatives that surfaced in California during the past few years, namely the passage of *AB 1890* and the ongoing natural gas restructuring investigation at the CPUC.

The implementation of *AB 1890* mandates and potential changes in the natural gas market raise questions about how individual customer energy consumption patterns might change in the future. This section, however, provides estimated projections of natural gas and electricity consumption through the year 2007 based on the assumptions that the effects of restructuring will not substantially influence consumption patterns. Later in this report we touch on those issues surrounding *AB 1890* that may influence consumption and why we believe their effects will be minimal. This section begins with an outlook for annual electricity consumption and peak demand,

³ The forecasts were prepared using a series of end-use models that employ a complex series of calculations that simultaneously consider such factors as economic growth, population, weather characteristics, changes in energy utilization, regulatory conditions, and recorded consumption.

⁴ CEC, *DRAFT Ad Hoc Information Committee on the Energy Market Information Proceeding*, Docket No. 97-DC&CR-1, Transaction No. 8803, June 12, 1998.

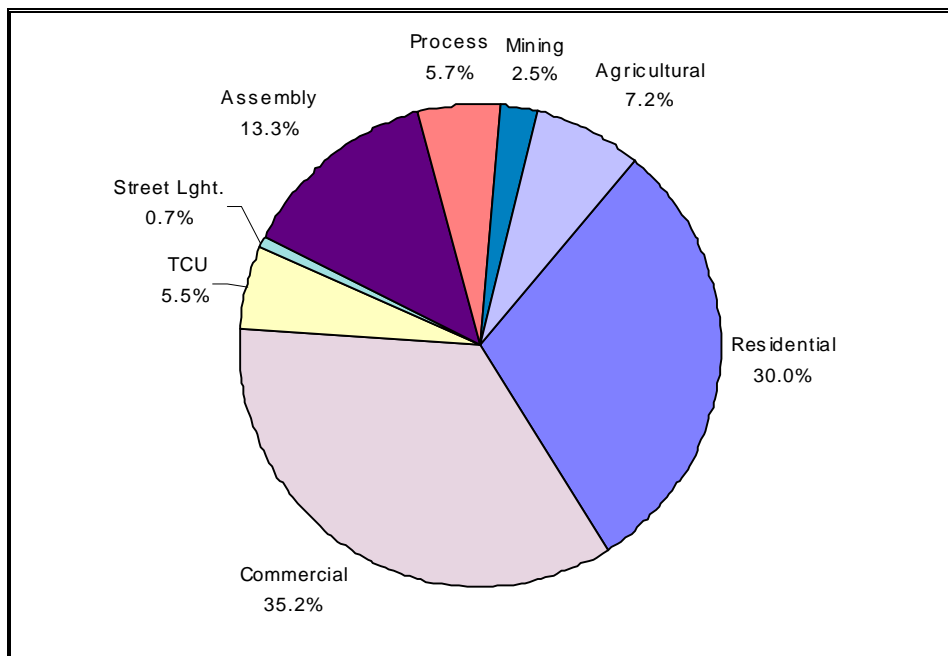
followed by a natural gas demand outlook. The section closes by highlighting how energy consumption varies across counties in the state.

Statewide Electricity Consumption and Peak Demand

California is the second largest consumer of electricity in the United States, Texas being the largest. Statewide electricity consumption reached 246,225 GWh in 1997, the second consecutive year that electricity demand grew in excess of 2.9 percent compared to the previous year. The growth rates experienced during 1996 and 1997 are consistent with the growth in the state's economy, which has resulted in increased demand in the residential and commercial sectors. In the residential sector, net migration (the difference between people moving into and out of California) is positive again after several years of being negative. Heightened business activity has reduced the level of unused commercial office space and increased the need for construction of new facilities and additional electricity demand.

Figure 1 confirms how important growth in residential and commercial demand is to the total growth in electricity consumption in California. In 1997, the two sectors accounted for almost two-thirds of all electricity consumed in the state. With little change to the sector shares anticipated during the next ten years, overall growth will continue to be dominated by the residential and commercial sectors even though growth in the remaining sectors is expected.

FIGURE 1 FIGURES
1997 ELECTRICITY CONSUMPTION SHARES BY SECTOR



Statewide electricity demand trends for the residential, commercial, industrial, agricultural, and other sectors are presented in Table 1 and Figure 2.⁵ Historical data is provided through 1997. Statewide energy consumption is expected to increase by 1.8 percent per year from 246,225 GWh in 1997 to 291,473 GWh in 2007. The projected growth rate is one half the 3.7 percent rate of increase experienced during the 1980s and slightly less the two-percent rate experienced during the past four years.

The forecast accounts for growth in electric vehicles, although they represent a relatively minor impact on electricity consumption from 2003 through 2007. The jump in agricultural consumption between 1997 (recorded consumption) and the first year of the forecast reflects the assumption that the Department of Water Resources (DWR) will fulfill all of its delivery contracts.

At least as important as forecasts of electricity consumption are forecasts of peak demand. Peak demand, expressed in megawatts (MW), measures the highest instantaneous consumption of electricity integrated over an hour of time during a calendar year. Peak demand estimates are important in the evaluation of system reliability, determination of points of congestion along the electric system grid, and identification of potential areas where additional transmission, distribution, and generation facilities may be needed.

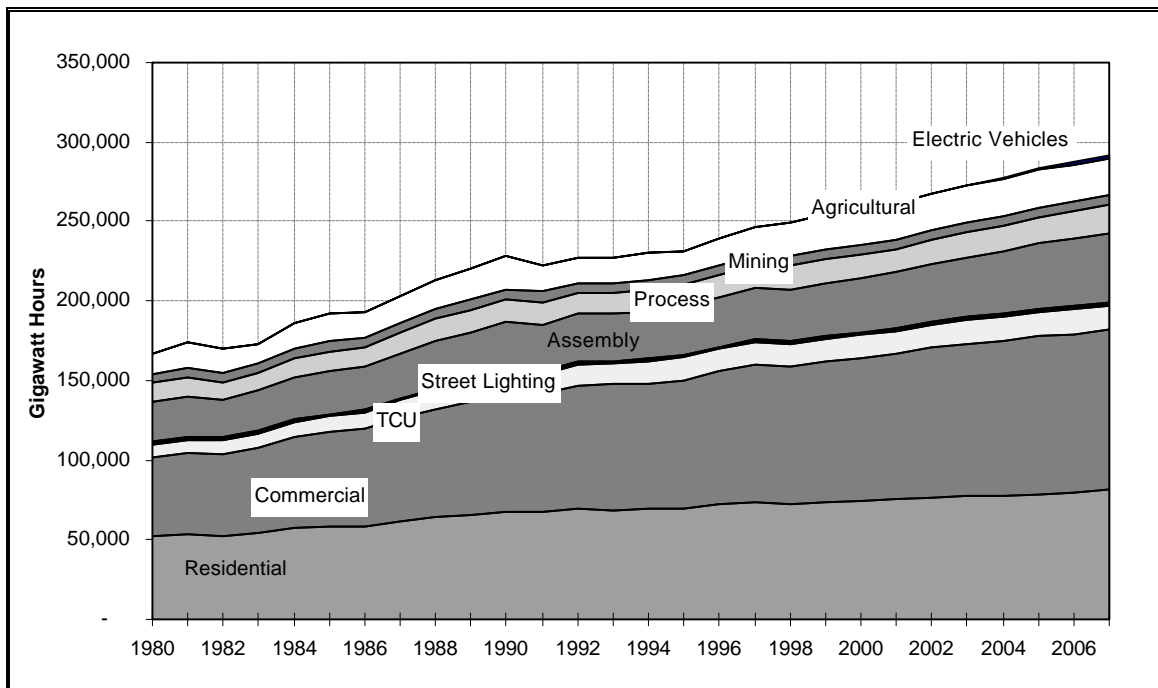
TABLE 1
STATEWIDE OUTLOOK FOR CALIFORNIA
Electricity Consumption By Sector (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agricultural	Electric Vehicles	Total
1995	69,767	80,527	14,171	1,611	30,576	14,042	5,976	14,321	-	230,990
1996	72,284	83,581	13,666	1,648	31,076	13,983	6,032	16,898	-	239,168
1997	73,759	86,593	13,506	1,680	32,731	14,049	6,217	17,690	-	246,225
1998	72,784	85,965	14,212	1,677	32,877	14,352	6,095	21,964	-	249,926
1999	73,579	88,014	14,367	1,695	33,645	14,536	6,117	22,228	-	254,181
2000	74,422	89,622	14,522	1,714	34,319	14,649	6,085	22,499	-	257,832
2001	75,239	91,242	14,694	1,732	35,072	14,793	6,079	22,711	-	261,563
2002	76,098	94,493	14,866	1,751	36,151	15,107	6,070	22,889	-	267,425
2003	77,004	96,164	15,027	1,770	37,587	15,573	6,058	23,115	356	272,654
2004	77,931	96,810	15,216	1,790	39,266	16,150	6,045	23,321	739	277,269
2005	78,920	98,982	15,411	1,810	40,842	16,734	6,046	23,476	1,083	283,304
2006	79,929	99,478	15,573	1,831	42,126	17,138	6,073	23,631	1,393	287,172
2007	80,971	100,696	15,704	1,851	43,301	17,469	6,094	23,723	1,664	291,473
Average Annual Growth Rates										
1995-96	3.61%	3.79%	-3.56%	2.31%	1.64%	-0.42%	0.94%	18.00%	na	3.54%
1996-97	2.04%	3.60%	-1.17%	1.97%	5.33%	0.48%	3.07%	4.68%	na	2.95%
1997-07	0.98%	1.63%	1.63%	1.02%	3.23%	2.43%	-0.20%	3.41%	na	1.84%

Historical data through 1997

⁵ Appendix A contains the full historical series and forecast of electricity consumption.

FIGURE 2
STATEWIDE OUTLOOK FOR CALIFORNIA
Electricity Consumption By Sector



California's electricity demand typically peaks on a day in August between the hours of 3 and 5 p.m. It is usually driven by the larger-populated areas which have the widest variation in temperatures, namely most of the Southern California Edison (SCE) service territory and the Central Valley (San Joaquin and Sacramento Valleys). Coincident peak⁶ demand estimates for the state are illustrated in Figure 3 with data shown in Table 2. The table shows that peak demand is expected to increase 1.7 percent per year, slightly slower than electricity consumption, from 46,505 MW in 1997 to 54,566 MW in 2007.⁷

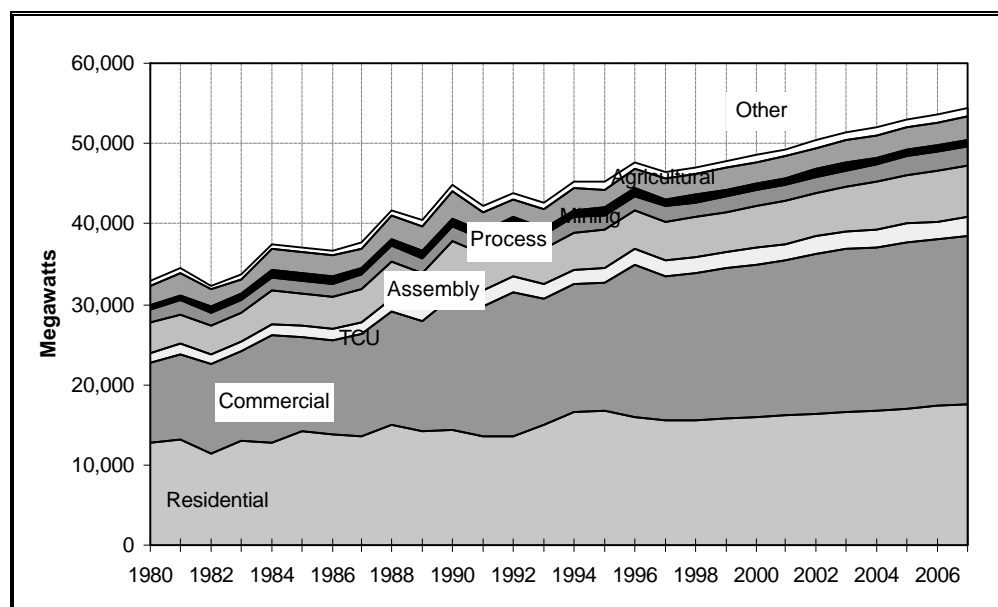
The restructured electricity marketplace places new emphasis on analysis of specific geographic regions where prices and load conditions may differ from the average (i.e., the Independent System Operator's (ISO) congestion zones). Transmission across these zones will cause price variation for customers on either side of the congested path. Past experience suggests that peak demand will vary across ISO zones. For example, in 1996, California's statewide system peaked at 4 p.m. on August 14, but peak demand by service territories occurred at a different hours.

⁶ Coincident peak demand is the aggregate demand of each customer, customer class or utility at the time of statewide system peak. Non-coincident peak is the peak demand of each customer, class of customers or utility, regardless of the time of statewide system peak.

⁷ Appendix B contains Staff's complete recorded series and forecast of peak demand.

SCE's peak occurred at 3 p.m., and the Sacramento Municipal Utility District's (SMUD) at 5 p.m.. The peaks for Los Angeles Department of Water & Power (LADWP) and Burbank, Glendale, and Pasadena (BG&P) occurred one hour later. With different sets of climate zones and different energy requirements, not only did Pacific Gas & Electric (PG&E) and the Imperial Irrigation District (IID) systems peak at different hours, they peaked on different days (July 29 for PG&E and June 3 for the IID). In the restructured electricity environment, system peaks by geographic region will become even more diverse as planning and pricing occurs within ISO congestion zones. Staff intends to carefully investigate this issue in future Outlooks.

FIGURE 3
STATEWIDE OUTLOOK FOR CALIFORNIA
Electric End-Use Coincident Peak Demand By Sector



Note: Coincident peak demand was derived using the non-coincident 8,760 hourly system load data from 1993 to 1996 as reported by investor-owned and municipal utilities to the Federal Energy Regulatory Commission. The hourly loads were summed, allowing identification of the peak hour for the state in each year analyzed. The peak hour and coincident factor for each utility was derived annually. A four-year weighted average coincident peak factor of 0.9735 was then multiplied to the sum of the seven service/planning areas' non-coincident peak demand values plus DWR's estimate of its coincident peak load.

TABLE 2
STATEWIDE OUTLOOK FOR CALIFORNIA
Electric End-Use Coincident Peak Demand By Sector (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly
1995	9,200	7,545	10,828	5,047	1,927	4,621
1996	8,363	7,608	11,386	7,452	1,924	4,803
1997	8,334	7,137	11,326	6,633	1,904	4,865
1998	8,417	7,205	11,493	6,686	1,927	4,968
1999	8,516	7,291	11,775	6,820	1,952	5,083
2000	8,619	7,381	11,996	6,913	1,967	5,186
2001	8,717	7,473	12,220	7,004	1,987	5,299
2002	8,820	7,567	12,668	7,230	2,028	5,459
2003	8,928	7,663	12,901	7,320	2,090	5,671
2004	9,038	7,764	12,989	7,344	2,166	5,919
2005	9,154	7,873	13,294	7,437	2,242	6,153
2006	9,273	7,987	13,359	7,451	2,296	6,345
2007	9,396	8,103	13,526	7,515	2,340	6,522
Average Annual Growth Rates						
1995-96	-9.11%	0.84%	5.15%	47.67%	-0.12%	3.92%
1996-97	-0.35%	-6.19%	-0.53%	-11.00%	-1.08%	1.30%
1997-07	1.27%	1.35%	1.94%	1.33%	2.29%	3.41%
Year	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Total*	
1995	867	2,364	1,943	0	45,191	
1996	859	2,493	1,976	0	47,733	
1997	831	2,585	2,029	0	46,505	
1998	838	2,628	2,046	0	47,083	
1999	841	2,672	2,069	0	47,909	
2000	838	2,717	2,091	0	48,615	
2001	837	2,751	2,116	0	49,325	
2002	836	2,776	2,141	0	50,459	
2003	835	2,813	2,164	31	51,363	
2004	834	2,846	2,192	63	52,117	
2005	836	2,868	2,220	93	53,152	
2006	840	2,892	2,244	119	53,803	
2007	843	2,904	2,263	142	54,566	
Average Annual Growth Rates						
1995-96	-0.96%	5.47%	1.70%	NA	5.62%	
1996-97	-3.20%	3.68%	2.67%		-2.57%	
1997-07	0.14%	1.23%	1.15%	NA	1.73%	
*Totals do not sum because Staff does not produce sector peak demand for						
DWR or the OTHER Planning Area.						

*Data calibrated to history through 1996

Statewide Natural Gas Consumption

Similar to its electricity consumption ranking, California is the second largest consumer of natural gas in the nation, ranking behind Texas.⁸ In 1997, the Golden State consumed more than 20,000 million therms, with about 35 percent of that amount used to generate electricity. When considering expected trends in natural gas consumption, it is important to note that natural gas used for electric generation fluctuates greatly from year to year; the level of hydroelectric power available to the state each spring explains this sharp variation. As a general rule, higher levels of precipitation during a given year means more hydroelectricity is available and thus less natural gas is needed for electric generation.

Recent data for the PG&E gas service territory provides an example. In 1994, the last year of an extended statewide drought, limited hydroelectric power availability drove up natural gas demand for electricity production to 2,792 million therms. By comparison, in 1997, a wet year with ample hydroelectric power available to the utility, only 1,212 million therms were needed, 57 percent less than that required in 1994. The story is similar for electric generation in the Southern California Gas (SCG) service territory. In 1994, natural gas demand for electric generation was 2,602 million therms. Recorded consumption dropped by nearly 40 percent to 1,577 million therms this past year. As California emerges from the El Niño winter of 1997-98, ample hydroelectric power is expected to be available, which should leave natural gas use for electric generation down for this year and next.⁹

To ensure that the volatility of electric generation natural gas requirements does not distort the outlook for statewide natural gas consumption, the remainder of this report excludes natural gas consumption for electric generation from the analysis. Statewide natural gas consumption (i.e., without electric generation) is expected to increase by one percent per year from 12,978 million therms in 1997 to 14,235 million therms in 2007 (Table 3). The industrial sector, primarily the process-related industries, is responsible for the bulk of the anticipated increase in gas demand. Historical and projected consumption patterns are displayed by sector in Figure 4.

⁸ Texas' use of natural gas to meet industrial and electric generation load is significantly greater than California. California residential and commercial natural gas consumption is the largest in the nation.

⁹ Source: 1998 California Gas Report, Disposition Summary Tables, p.17-21.

TABLE 3
STATEWIDE OUTLOOK FOR CALIFORNIA
Natural Gas End-Use Consumption By Sector (Millions Therms)*

Year	Residential	Commercial	TCU	Assembly	Process	Mining	Agriculture	Natural Gas Vehicles	Total
1995	4,780	1,749	175	1,087	1,918	2,146	130	-	11,985
1996	4,819	1,853	191	1,090	2,463	2,284	146	-	12,845
1997	4,811	1,966	191	1,182	2,361	2,306	160	-	12,978
1998	4,892	1,946	200	1,168	2,572	2,278	139	22	13,218
1999	4,910	1,986	204	1,201	2,632	2,278	141	30	13,381
2000	4,946	2,031	219	1,245	2,703	2,242	142	41	13,569
2001	4,963	2,062	219	1,269	2,741	2,222	143	79	13,698
2002	4,981	2,093	219	1,275	2,760	2,208	145	107	13,789
2003	5,002	2,120	219	1,290	2,793	2,184	145	131	13,885
2004	5,026	2,148	221	1,305	2,819	2,151	145	150	13,964
2005	5,053	2,174	222	1,314	2,838	2,126	145	165	14,036
2006	5,083	2,202	223	1,325	2,856	2,116	145	179	14,129
2007	5,115	2,223	224	1,343	2,886	2,108	145	192	14,235
Average Annual Growth Rates									
1995-96	0.82%	5.94%	9.08%	0.27%	28.41%	6.44%	11.92%	NA	7.18%
1996-97	-0.17%	6.15%	-0.15%	8.50%	-4.14%	0.96%	9.86%	NA	1.03%
1997-07	0.63%	1.31%	1.72%	1.36%	2.23%	-0.86%	-0.95%	NA	0.97%

*Historical data through 1997

FIGURE 4
STATEWIDE OUTLOOK FOR CALIFORNIA
Natural Gas End-Use Consumption By Sector

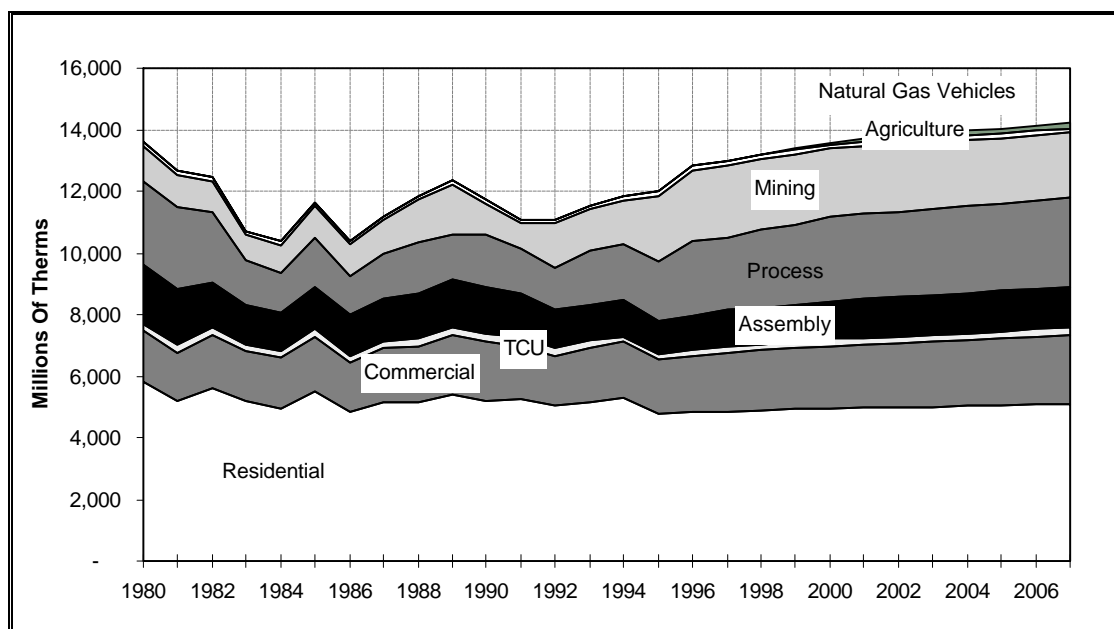
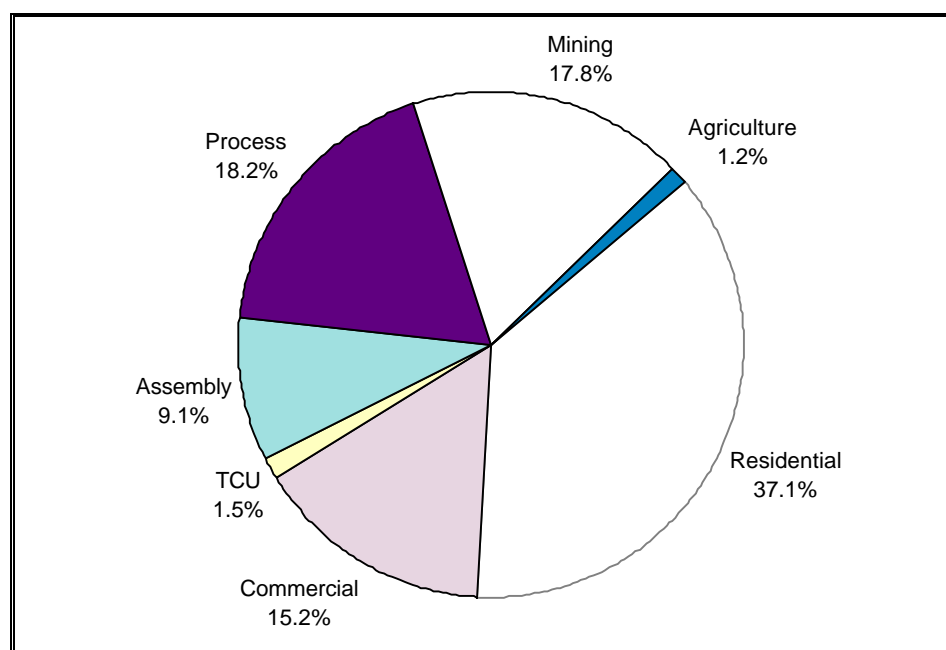


Figure 5 compares statewide sector shares of natural gas consumption in 1997. Residential customers comprise the largest consuming group of natural gas, accounting for nearly 40 percent of total end-use consumption. Different from the breakdown of electricity consumption, the mining (i.e., resource extraction) and process industries account for a considerably greater share of the natural gas consumption in the state. In the resource extraction industry, the difference in shares between gas and electricity can be attributed to heavy reliance on gas for thermal-enhanced crude oil production in Kern County. For process industries, the use of natural gas is more prevalent for the more energy intensive activities (e.g., heating and drying).

FIGURE 5
1997 NATURAL GAS CONSUMPTION SHARES BY SECTOR



County Energy Consumption Comparisons

The varying economic and demographic conditions across counties throughout the state cause significant differences in electricity and natural gas consumption patterns. For example, the nine largest counties in California accounted for 69 percent of all electricity consumed in the state in 1997. Seven of the 58 counties in the state each consumed at least 10,000 GWh of electricity, with Los Angeles being the largest by far. Los Angeles accounts for about one-fourth of statewide electricity consumption. Orange and Santa Clara Counties, driven by energy-intensive high technology industries, are the second and third largest county electricity consumers in the state.

Five counties in total consumed 7,528 million therms in 1997, accounting for 58 percent of statewide natural gas end-use consumption. Los Angeles was the largest natural gas consuming county, comprising nearly one-third of statewide end-use consumption, 4,300 million therms in

1997. Heavy chemical and petroleum refining industries placed Contra Costa county second in natural gas consumption, followed by Orange and Kern Counties.

Table 4 shows the counties with the largest projected levels of energy consumption growth. Riverside County leads in natural gas growth and is third in electricity growth. The neighboring county of San Bernardino follows closely. Growth in these counties is driven by their proximity to the Los Angeles basin for companies that cannot find affordable floor space there, and by people who cannot find affordable housing in Los Angeles and Orange Counties. Kern County leads the list in anticipated electricity growth due to the high proportion of DWR pumping. It is in Kern County that DWR lifts water up and over the Tehachapi Mountains. Kern County also ranks high in natural gas growth due to an expected upturn in oil and gas extraction.

Strong industrial activity in Santa Clara and San Joaquin Counties is expected to produce continued growth in electricity and natural gas consumption. Strong growth in Sacramento County's residential, commercial, and industrial sectors is expected to continue. Although shown on the table, Glenn and Imperial counties are relatively small consumers of energy compared to the larger counties.

TABLE 4
COUNTIES WITH LARGEST EXPECTED GROWTH IN
ENERGY CONSUMPTION BETWEEN 1997 AND 2007

Electricity (% change per year)		Natural Gas (% change per year)	
Kern	4.42%	Riverside	2.11%
San Bernardino	2.49%	San Bernardino	1.67%
Riverside	2.45%	San Diego	1.44%
Glenn	2.11%	Kern	1.35%
Santa Clara	2.04%	Sacramento	1.31%
San Joaquin	1.93%	Contra Costa	1.23%
Imperial	1.91%	Orange	1.09%

Annual electricity forecast and historical consumption data for each of California's 58 counties are provided in Table A19 of Appendix A. Natural gas consumption data are provided in Table C6 of Appendix C.

II. ENERGY OUTLOOK BY KEY SECTOR

This section reviews energy consumption trends in the residential, commercial and industrial sectors. The smaller customer sectors have more diverse patterns and are not described here.¹⁰ It discusses some of the conditions expected to influence each market during the forecast period. In the residential sector, the report pays special attention to the impact of energy consumption by households over time. The commercial section looks at energy use per square foot. The industrial sector identifies the largest energy consuming industry groups.

Residential Energy Consumption Trends

Electricity consumption in the residential sector comprised 30 percent of statewide use in 1997 but is expected to account for only 28 percent of the total by the end of the forecast. In 1997, statewide consumption of electricity by residential customers was 73,759 GWh. This estimate is expected to increase by one percent per year to 80,971 GWh in 2007. Natural gas consumption in the residential sector accounted for 38 percent of statewide end-use consumption in 1997 but is expected to decline in market share by two percent through 2007. In 1997, statewide consumption of natural gas by residential customers was 4,810 million therms. This level is projected to increase by 0.6 percent per year to 5,115 million therms in 2007.

Figures 6 and 7 display statewide shares of residential consumption by service/planning area. The two areas with the largest shares of residential electricity consumption, PG&E and SCE, contain the largest population base. Similarly, on the natural gas side, PG&E and SCG have the largest residential service territories.

Figures 8 and 9 compare statewide average shares of residential energy use grouped by the following end-use categories: cooling, heating, laundry, water heating, pool and spa, major appliances, refrigeration, and lighting and miscellaneous. Lighting and miscellaneous plus refrigeration comprise 56 percent of total electricity used by residential customers. Space heating is the main driver for natural gas consumption, accounting for almost half of residential use. Natural gas water heating also accounts for a major share of residential use.

Figures 10 and 11 compare energy consumption per household across the larger service/planning areas. Annual electricity consumption per household is grouped tightly across service/planning areas with the exception of SMUD, which has a high saturation of electrically heated homes. For gas customers, the mild climate in San Diego County places customers in the SDG&E service area at the low end of consumption per household.

¹⁰ While these minor sectors are not described specifically here, Appendices A-C contains projections of energy consumption for transportation, communications, utilities, street lighting, agriculture, and vehicle sectors.

FIGURE 6
RESIDENTIAL ELECTRICITY CONSUMPTION
1997 Shares By Service/Planning Area

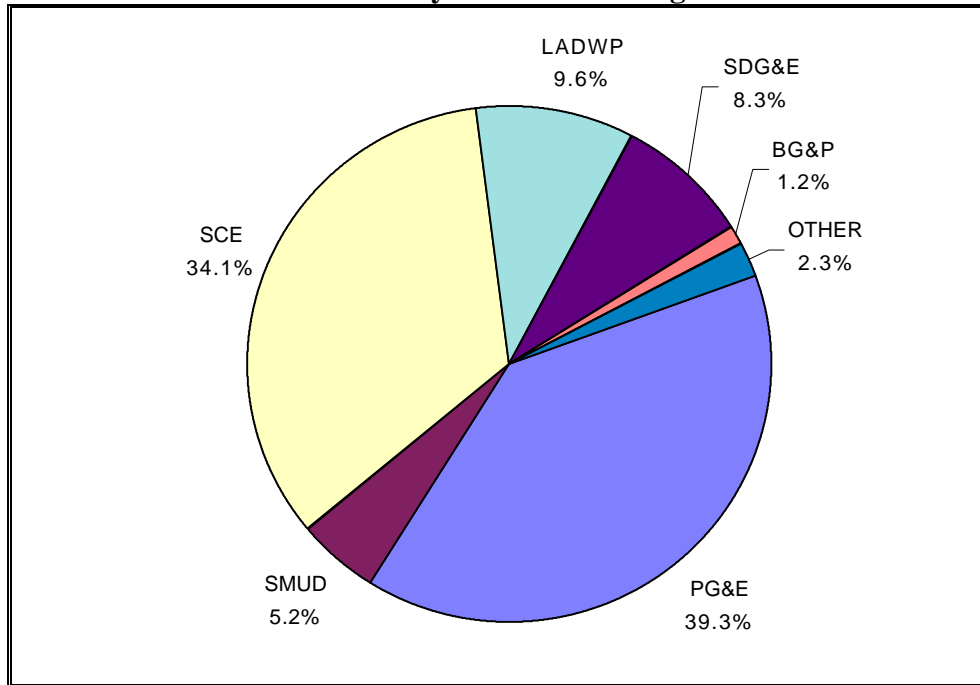


FIGURE 7
RESIDENTIAL NATURAL GAS CONSUMPTION
1997 Shares By Service Territory

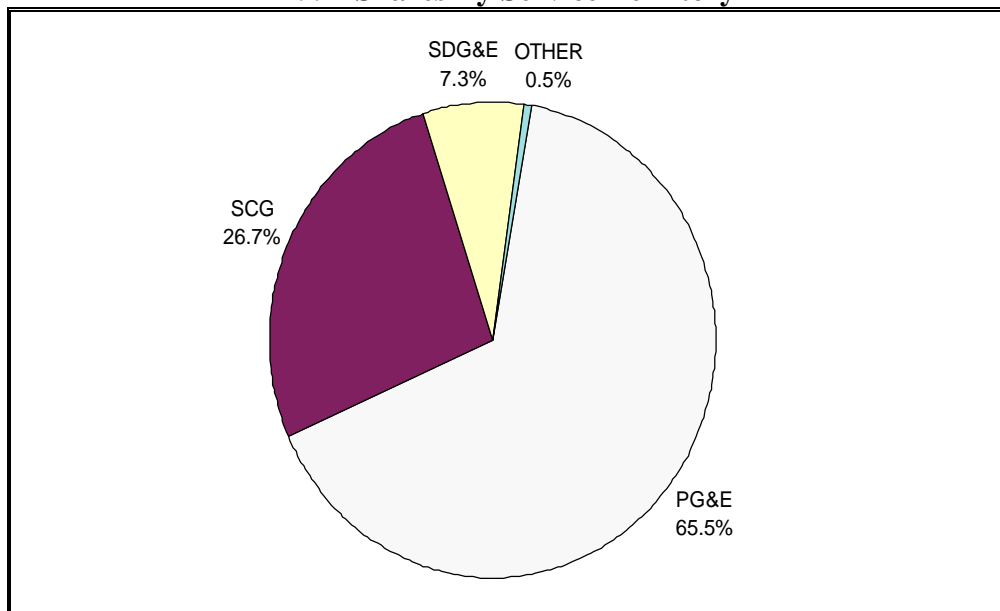


FIGURE 8
RESIDENTIAL ELECTRICITY CONSUMPTION
1997 Grouped End-Use Shares

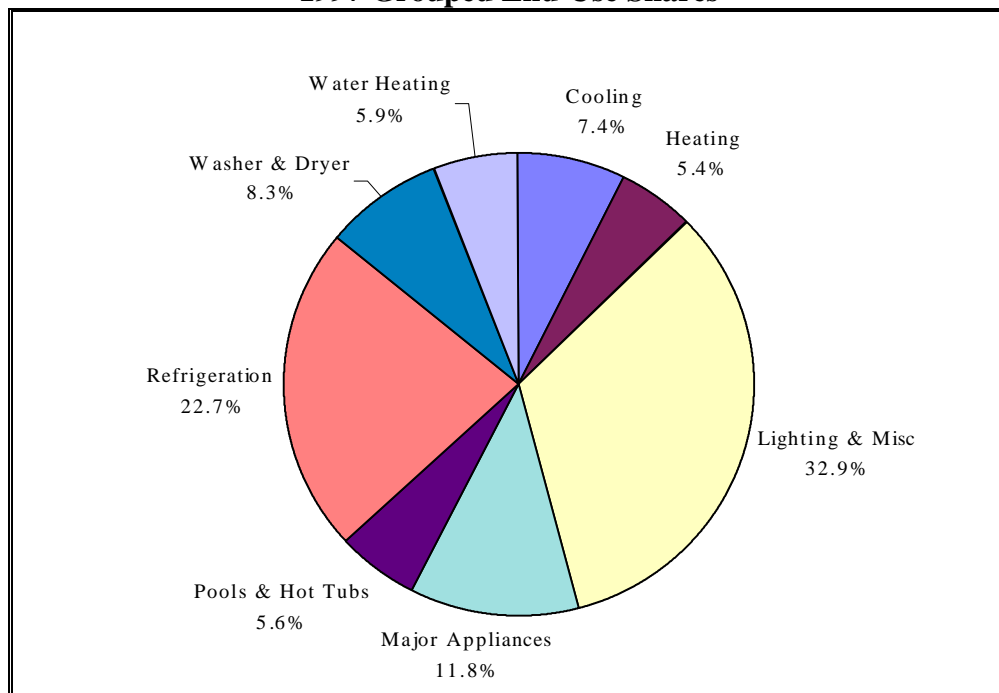


FIGURE 9
RESIDENTIAL NATURAL GAS CONSUMPTION
1997 Grouped End-Use Shares

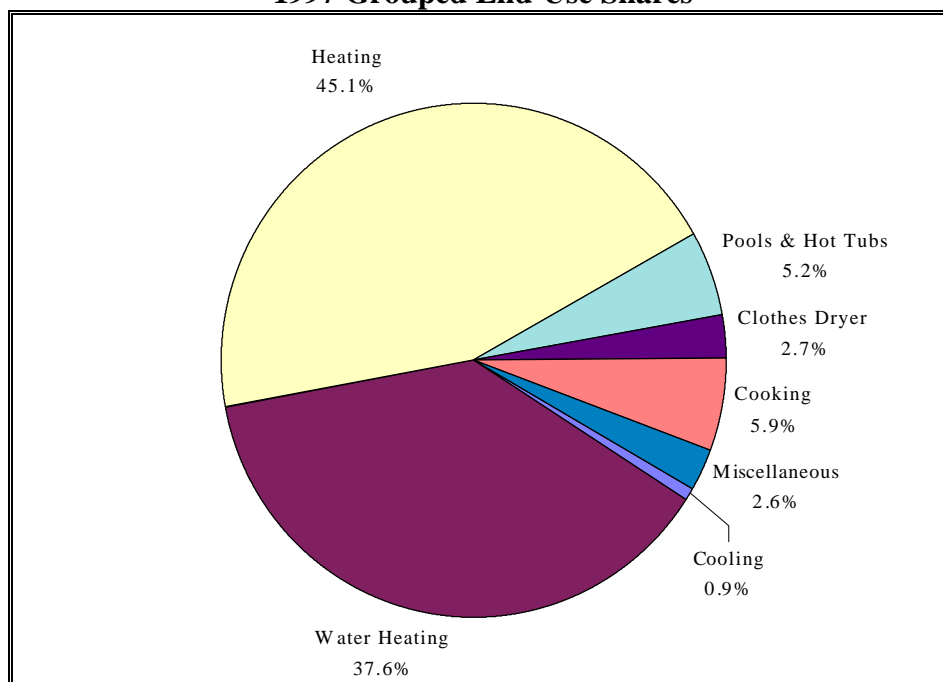


FIGURE 10
RESIDENTIAL ELECTRICITY CONSUMPTION COMPARISONS
kWh per Household

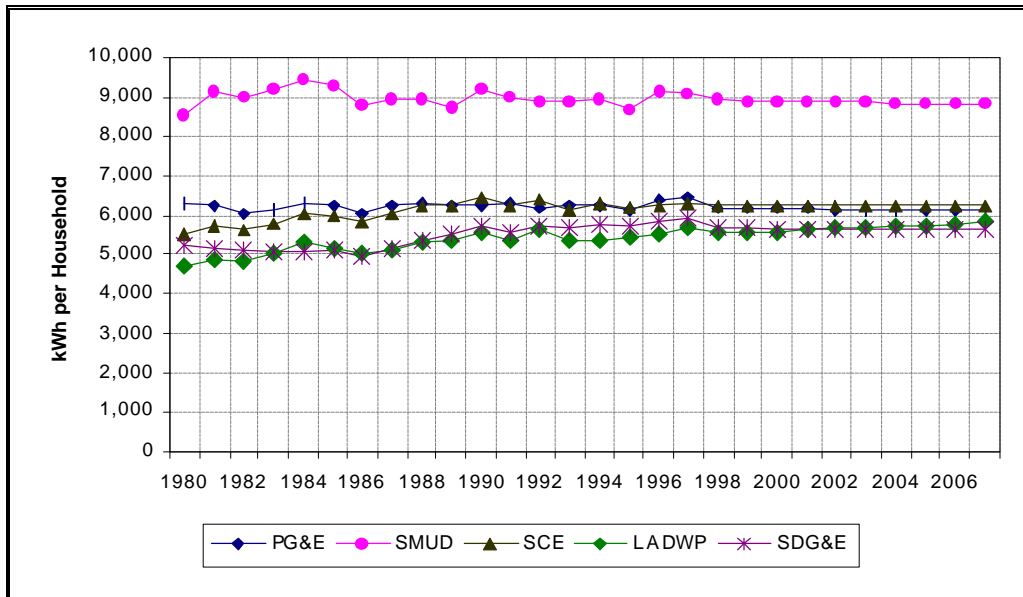
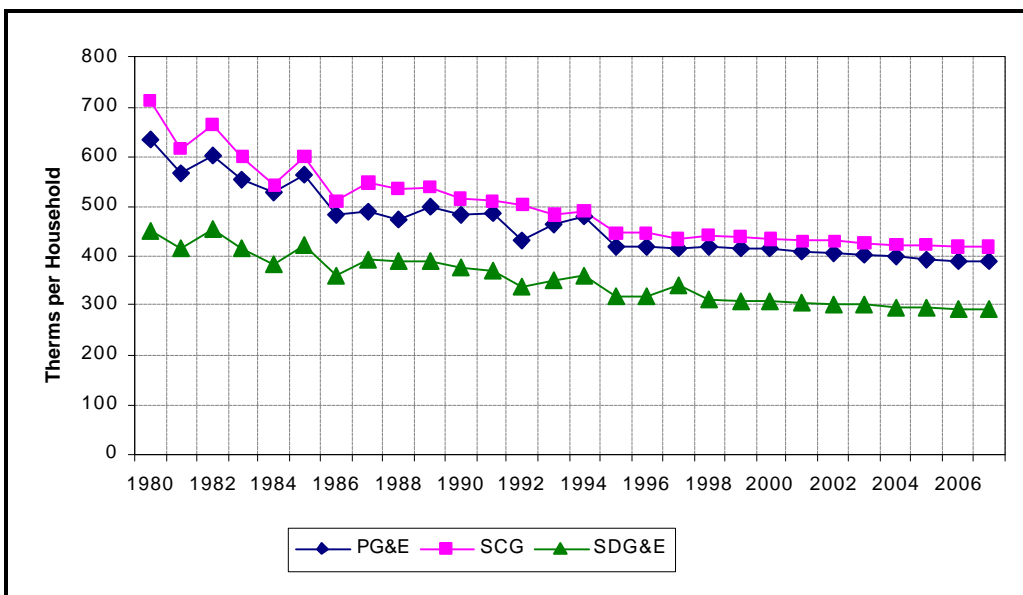


FIGURE 11
RESIDENTIAL NATURAL GAS CONSUMPTION COMPARISONS
Therms per Household



Commercial Energy Consumption Trends

Electricity consumption in commercial buildings accounted for 35 percent of statewide consumption in 1997, with the share expected to decline slightly through 2007. In 1997, statewide consumption of electricity by commercial buildings was 86,593 GWh. Electricity consumption will increase 1.6 percent per year thereafter, reaching 100,696 GWh by 2007. The commercial sector comprised about 16 percent of statewide consumption of natural gas in 1997 and is expected to remain at that level through the next ten years. In 1997, statewide consumption of natural gas within commercial buildings was 1,945 million therms. It is expected to increase by 1.4 percent per year, reaching 2,223 million therms in 2007. Figures 12 and 13 display statewide shares of commercial consumption by service/planning area.

Figures 14 and 15 compare statewide shares of commercial energy consumption by end-use. Indoor lighting is the largest electric consuming end-use, comprising approximately one-third of electricity consumption by commercial customers. As in the residential sector, space heating is a main driver for natural gas consumption, accounting for nearly 40 percent of commercial use.

Figures 16 and 17 compare commercial sector energy consumption per square foot across service/planning areas. Electricity consumption per square foot is grouped tightly across planning/service areas with the exception of SMUD, which has a high percentage of electrically-heated commercial buildings. As with the residential sector, the mild climate in San Diego County places commercial sector customers in the SDG&E service area at the low end of natural gas consumption per square foot.

FIGURE 12
COMMERCIAL ELECTRICITY CONSUMPTION
1997 Shares By Service/Planning Area

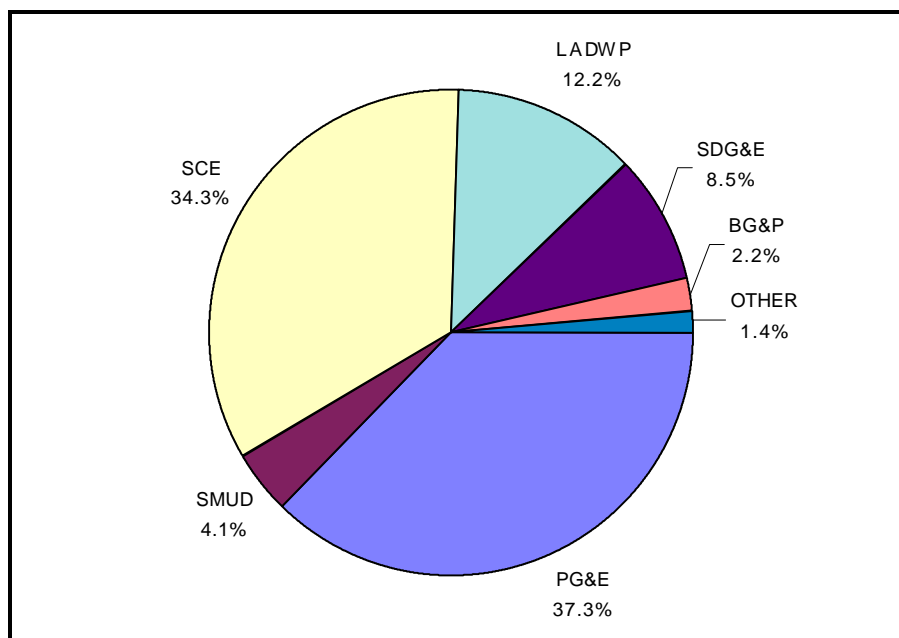


FIGURE 13
COMMERCIAL NATURAL GAS CONSUMPTION
1997 Shares By Service Territory

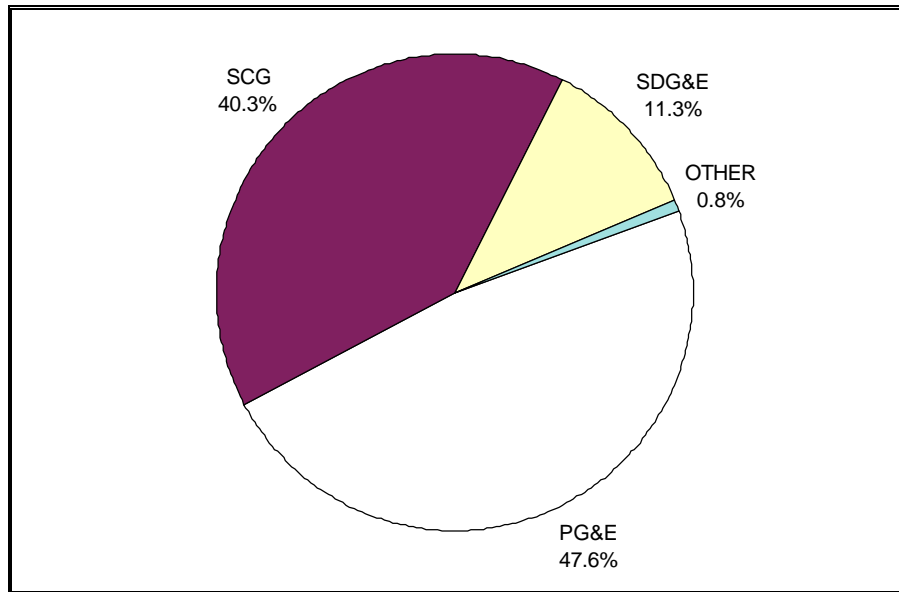


FIGURE 14
COMMERCIAL ELECTRICITY CONSUMPTION
1997 Statewide End-Use Shares

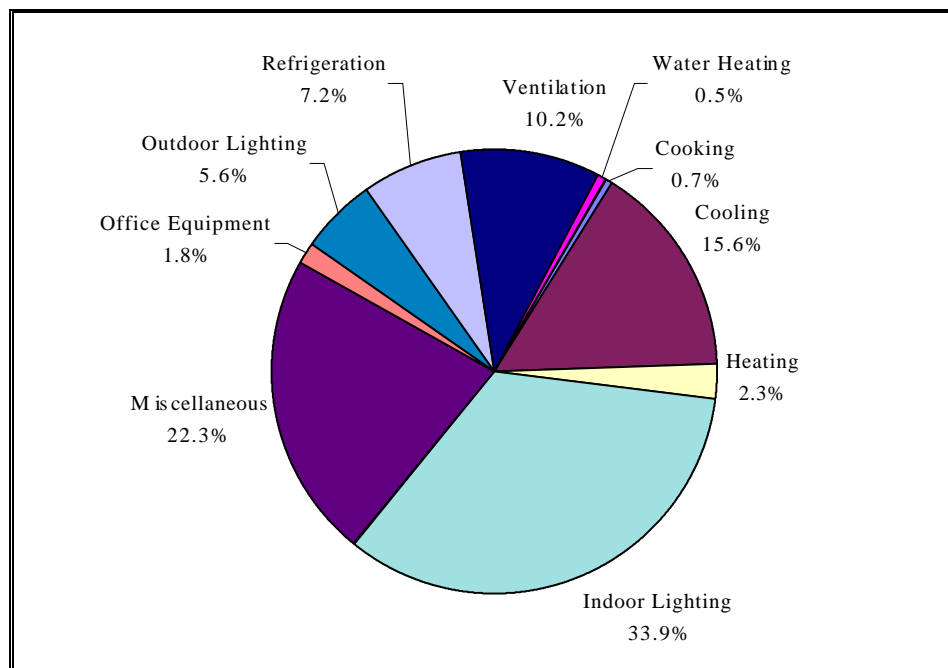


FIGURE 15
COMMERCIAL NATURAL GAS CONSUMPTION
1997 Statewide End-Use Shares

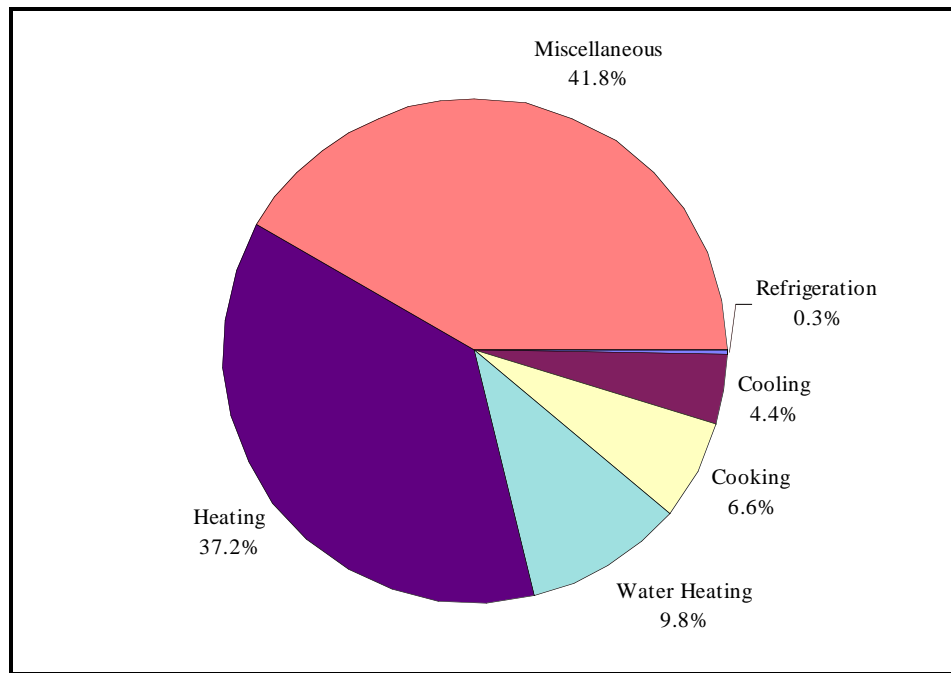


FIGURE 16
COMMERCIAL ELECTRICITY CONSUMPTION COMPARISONS
Service/Planning Area kWh per Square Foot

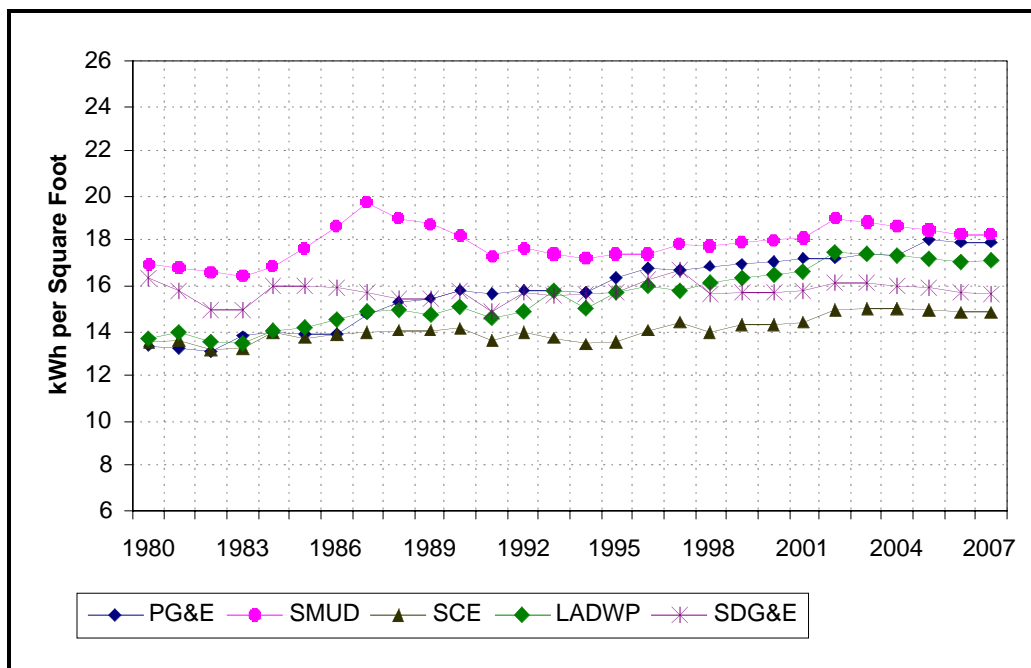
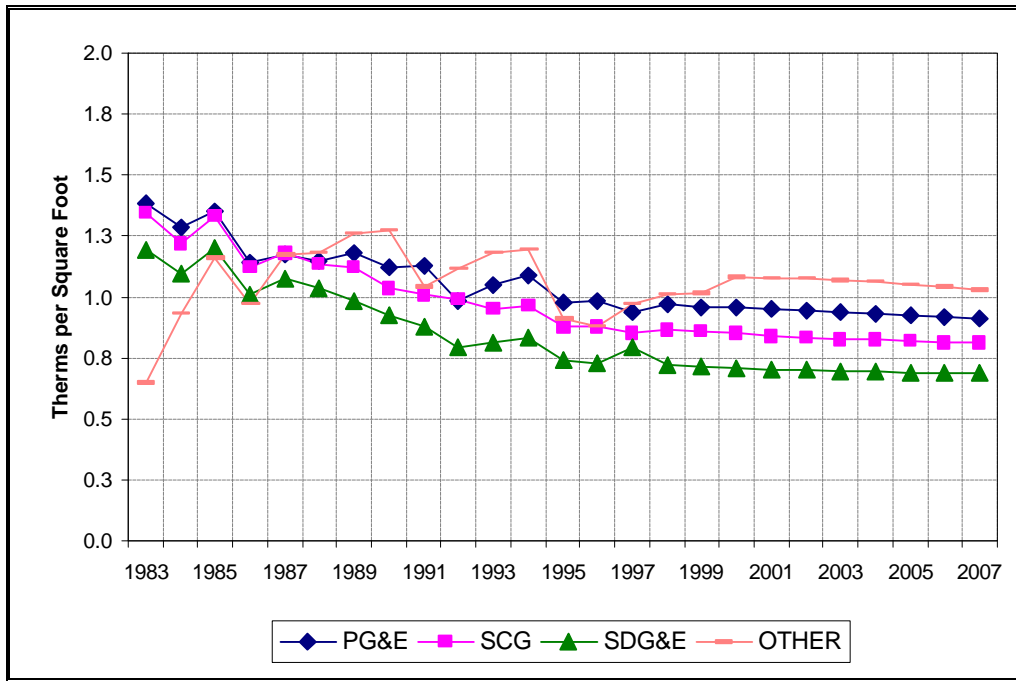


FIGURE 17
COMMERCIAL NATURAL GAS CONSUMPTION COMPARISONS
Service Territory Therms per Square Foot



Industrial Energy Consumption Trends

Electricity consumption in the industrial sector (i.e., process, resource extraction and assembly industries) comprised 22 percent of statewide use in 1997 and is expected to increase to 23 percent by 2007. As Figure 1 indicated, assembly industries accounted for the largest level of industrial electricity consumption while process and resource extraction (i.e., mining) industries used the largest levels of natural gas. The large degree of natural gas consumption by the process and resource extraction industries reflects a heavy reliance on heat processing functions.

In 1997, statewide consumption of electricity in these three sectors was 52,997 GWh, expected to increase by 2.4 percent per year, reaching 66,864 GWh in 2007. By comparison, natural gas use is projected to increase at a modest 0.7 percent per year, from 5,483 million therms in 1997 to 6,337 million therms in 2007.

Table 5 lists the five largest electricity and natural gas users by Standard Industrial Classification (SIC) group in California. Petroleum refining (SIC 29), oil and gas extraction (SIC 13), and chemicals and allied products (SIC 28) are among the largest users of both electricity and natural gas. Food products (SIC 20) is also a large energy consumer of both energy types, but Staff distinguishes between assembly-related activities (SIC 20x), which require high electricity consumption, and fruits and vegetables processing (SIC 203), which require large amounts of

natural gas for thermal processing. Electronic components (SIC 367) completes the electricity list while paper mills (SIC 262) finalizes the natural gas list. Table 6 compares energy consumption for each of the industries shown in the previous table for 1997, 2002, and 2007.

TABLE 5
LARGEST INDUSTRIAL ENERGY USER GROUPS IN CALIFORNIA – 1997

Electricity		Natural Gas	
Description	SIC	Description	SIC
Petroleum Refining	29	Oil and Gas Extraction	13
Food Products*	20x	Petroleum Refining	29
Oil and Gas Extraction	13	Paper Mills	262
Chemicals and Allied Products	28	Processed Fruits and Vegetables	203
Electronic Components	367	Chemicals and Allied Products	28
* Food products exclude Processed Fruits and Vegetables (SIC 203) and Sugar and Confectionery Products (SIC 206)			

TABLE 6
ENERGY CONSUMPTION ESTIMATES
Largest Energy Users In California

Industry Group	SIC	1997	2002	2007	Annual Change
Electricity Consumption (GWh)					
Petroleum Refining	29	7,774	8,063	9,021	1.5%
Food Products*	20x	3,893	4,213	4,530	1.5%
Oil and Gas Extraction	13	3,816	3,743	3,603	-0.6%
Chemicals and Allied Products	28	3,781	4,121	4,767	2.3%
Electronic Components	367	3,673	4,420	5,492	4.1%
* Food products exclude Processed Fruits and Vegetables (SIC 203) and Sugar and Confectionery Products (SIC 206)					
Natural Gas Consumption (Million Therms)					
Oil and Gas Extraction	13	2,162	2,105	1,998	-0.8%
Petroleum Refining	29	1,628	1,743	1,813	1.1%
Paper Mills	28	371	431	458	2.1%
Processed Fruits and Vegetables	203	280	317	344	2.1%
Chemicals and Allied Products	28	213	236	249	1.6%

Table 7 identifies the fastest growing energy consuming industrial groups in California during the next decade. The computer and office equipment group is expected to experience the largest percentage increase in energy consumption in the industrial sector. Electricity consumption in that group is expected to increase 6.2 percent per year, well above the average 2.5 percent rate for the industrial sector. Natural gas use in the computer industry is projected to expand at five percent per year, well above the 0.7 percent average rate of increase for the entire industrial sector.

TABLE 7

FASTEST GROWING INDUSTRIAL ENERGY USER GROUPS IN CALIFORNIA 1997 THROUGH 2007

Electricity		Natural Gas	
Description	SIC	Description	SIC
Computers and Office Equipment	357	Computers and Office Equipment	357
Stone and Clay Products	32x	Electronic Components	367
Communications Equipment	366	Communications Equipment	366
Plastics Products	308	Plastics Products	308
Glass and Glassware	321	Instruments and Related Products	38

The rapid growth in the computer industry is also expected to drive some of the other industries shown in the table. For example, natural gas consumption in the electronic components industry is expected to grow by 4.8 percent per year, second on the list. Electricity consumption by this group, although not listed among the highest percentage gainers on the electricity side, is still expected to realize a 4.1 percent increase in electricity consumption during the next ten years. Much of this increase can be attributed to the increased need for semiconductor cleanrooms, which are highly energy-intensive.

In contrast to the industries shown in Table 5, Staff expects that a number of industries will lag behind most of the industrial group in terms of increased energy consumption. Two resource extraction industries are actually expected to experience a decline in energy consumption. Oil and Gas Extraction, among the industrial groups leading the state in energy consumption, will reduce its use of electricity and natural gas by 0.6 percent and 0.8 percent, respectively, during the next ten years. The decline in energy use from this industry group correlates with anticipated declines in oil and gas production in California. Even with the decline, this group will still lead the state in natural gas consumption. Electricity consumption from oil and gas producers, however, will drop from third to fifth in the state. The other significant resource extraction industry, coal mining, is relatively small and will not significantly impact statewide industrial energy consumption.

III. POTENTIAL IMPACT OF ELECTRICITY AND NATURAL GAS RESTRUCTURING ON FUTURE ENERGY CONSUMPTION

As mentioned in earlier sections, recent changes to the electricity market and the ongoing natural gas restructuring rulemaking at the CPUC have raised considerable uncertainty about whether and how energy consumption patterns will change in the future. This section provides a qualitative assessment of three specific factors that could influence future energy consumption patterns: 1) rate design, 2) promoting energy efficiency, and 3) the implications of Energy Service Providers (ESP)¹¹ marketing. This report stops short of a quantitative assessment, which is infeasible at this time. Staff anticipates quantifying these impacts in subsequent editions.

¹¹ An ESP is a non-utility entity that contracts with customers to provide commodity electric services.

Electricity and Natural Gas Rate Design

Electricity rates are presently frozen at June 1996 levels through March 2002, with a 10 percent rate reduction for residential and small commercial customers (i.e., commercial customers with less than 20 kW peak demand). After March 2002, **AB 1890** calls for an additional 10 percent reduction compared to 1996 rates. Should stranded cost be recovered prior to this date then the rate freeze would be suspended.

Customers are presently searching for ways to lower their bills rather than change consumption habits. The continued marketing of programs such as balanced payment plans are specifically designed to insulate the customer from price shocks in the marketplace or variations in their behavior which would lead to large changes in month-to-month costs. Currently, the only part of the electric market open to competition is generation, which accounts for less than one-quarter of the total electric bill. Energy Service Providers' provision of revenue cycle services (i.e., metering and billing) is also possible, but this is a very small portion of customer bills.

Under current practice in the electric industry, the majority of charges for various components of the total bill are volumetric; that is, they are charged on a consumption basis as measured by kWh used. Exceptions to this are very small monthly customer fixed charges of \$5.00 or less charged by some utilities. It has been suggested that a larger portion of the bill be subject to a fixed charge, consistent with the cost causation factors of the remaining utility distribution company services. This would reduce services priced using a volumetric charge to generation. These proposals are still in the preliminary stages of development and have not been considered in the baseline analysis upon which the forecast in this report is drawn. Impacts of structural changes such as combining larger fixed monthly charges (\$20-50) with smaller kWh charges are currently under analysis but consideration of implementation of any significant deviation from current rate practices after 2002 is highly speculative.

Currently, some sectors, such as agriculture and water pumping, are considering the feasibility of shifting load to take advantage of low off-peak electricity prices. Other sectors are also looking at time-of-use (TOU) rates in order to lower their costs. What is not clear, however, is the guarantee that shifting loads will lower costs. There appears to be a threshold level of load in the Power Exchange (PX) at which the electricity price jumps from under \$5 per MWh to over \$20 per MWh. So shifting load may not result in savings if the total load shifted would raise demand over the threshold. It is also not apparent from the first three months of PX price and load data that a strong relationship between price and load exists over specific hours of the day. (Looking at the April data, the PX price for a weekday load of 23,500 MW between 1 and 4 p.m. varied from \$25 to \$37 per MWh. More recent price fluctuations are even greater). Until PX pricing becomes more highly correlated to loads, it is not clear what advantage load shifting will have. The current market price signals are chaotic. Customers would have to change their use patterns daily to take advantage of load shifting, of which most could not.

For the large majority of electric customers, the cost of electricity is a very small part of overall expenditures. Customers mainly want to pay lower prices without changing their current consumption patterns. Electricity customers have not yet adopted patterns of decision making for

energy services that characterize consumers of other products. Thus, the overall impact of restructuring on energy consumption is highly uncertain. Choosing different energy providers may have little impact on customers' consumption behavior; businesses and households are currently attempting to reduce costs or influence generation mix by choosing alternative power suppliers.

One impact of recent gas rate cases, which may induce a minor increase in electricity consumption, is the addition of a fixed customer charge for small commercial customers. The current customer charge for small commercial gas customers is \$13.48 per month or about \$162 per year. For very small gas users, it may be beneficial to switch from gas to electric appliances such as water heaters and eliminate the gas customer charge. The size of this market is currently under investigation and is thought to have minimal impact on the total gas or electric outlook. Electric customers would not have the option of switching to gas if a customer charge was imposed for electric customers because virtually none of them would be able to switch completely away from electricity.

The energy forecasts in this report are based on a price forecast that is consistent with the utilities' implementation of electricity restructuring as mandated in **AB 1890**. Within the price forecast, 1996 rates are frozen until early 2002, and a 10 percent reduction in nominal rates is included for residential and small commercial customers. After the transition period, rates are expected to drop an additional 15 to 20 percent, depending upon sector, reflecting expiration of the competitive transition charge (see Table 9 following this section). These prices are factored into each sector model results through the various price components specific to each customer sector. Since no underlining rate design changes can be assumed given the uncertainty surrounding the post-2002 rate reductions, no significant changes in customer electricity consumption patterns can be predicted at this time.

Promoting Energy Efficiency in a Competitive Environment

Two state agencies are responsible for administering energy efficiency programs in California, the Energy Commission and the CPUC. The CPUC is using a new advisory body--the California Board for Energy Efficiency (CBEE)—to provide program design and funding recommendations. The CBEE was created by the CPUC in 1997 to promote market transformation/energy efficiency programs with funds recovered from ratepayers through the public goods charge mandated in **AB 1890**. The Energy Commission currently operates the Public Interest Energy Research program as mandated by **AB 1890**. The legislation requires that \$62.5 million be collected annually from investor-owned electric utility ratepayers for public interest energy research deployment and development (RD&D) efforts not adequately provided for by competitive and regulated markets. The Energy Commission develops mandatory building and appliance efficiency standards and also administers state/federal energy efficiency programs focused on conserving energy in certain specific agricultural and governmental sectors.

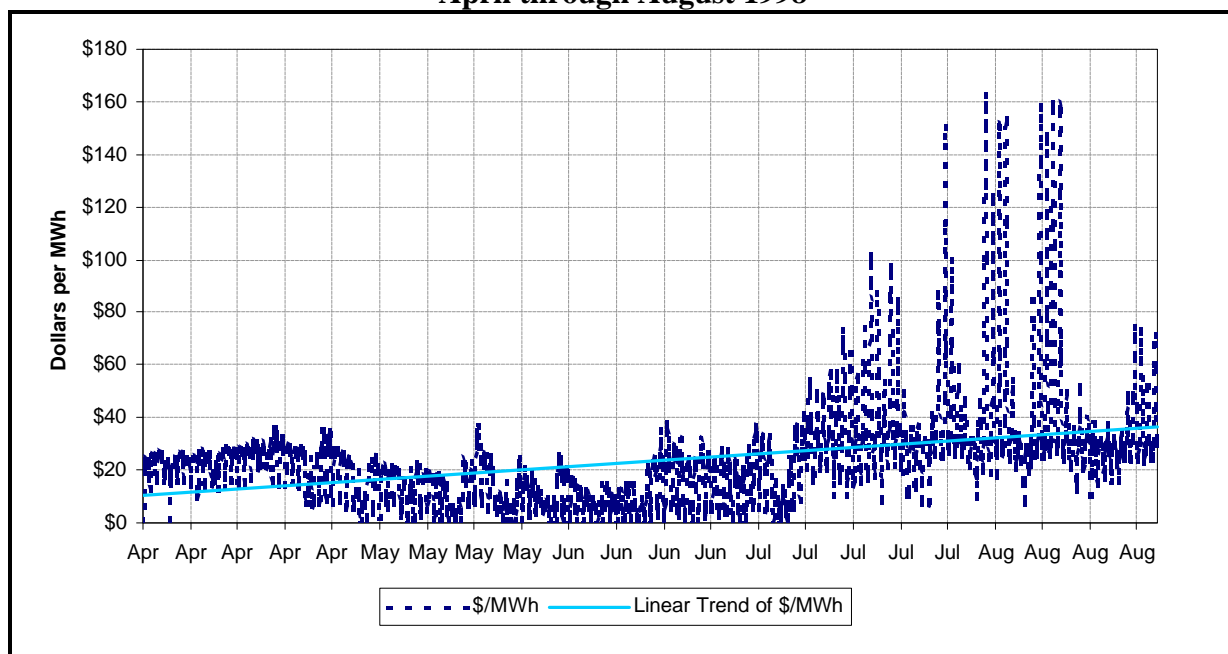
The forecast of electricity demand in this report includes the effects of energy efficiency programs administered by the utilities and by the Energy Commission through 1997, as well as savings due

to statewide building and appliance programs.¹² Using data from the managing agencies, Staff estimated the conservation effects of energy efficiency programs in place through 1997 with savings accruing over the life of the programs. Staff did not estimate the effects of programs that will be administered by the CBEE and Energy Commission under the auspices of **AB 1890**. Future modeling will need to incorporate the structural changes in the administration of public funds as outlined by **AB 1890** (1996) and SB 90 (1997).

Implications of Direct Access Marketing

Staff expects more response to price signals after the rate freeze because customer consumption patterns will no longer be exclusively influenced by traditional rate schedules. We also expect greater price variation in the power exchange. Most of the customers switching to direct access have loads greater than 50 kW, thus are required to have hourly interval meters. The combination of greater variation in the prices and a larger proportion of customers having hourly interval meters with which to respond, will affect changes in consumption patterns. Figure 18 displays the PX day-ahead prices through August 27, 1998. Table 8 displays the minimum, maximum and weighted average day-ahead prices experienced in the PX. Any new rate designs that better reflect costs in the restructured marketplace will also influence consumption. Staff is in the preliminary stages of updating the forecasting models to better reflect consumption patterns in the post-rate-freeze period, incorporating various rate design and price scenarios. Specific sensitivities related to these issues will be addressed in future reports.

FIGURE 18
DAY-AHEAD HOURLY PRICES IN CALIFORNIA'S POWER EXCHANGE
April through August 1998



¹² The methodology used to calculate these effects is described in the Staff report dated July 1995: *California Energy Demand: 1995-2015, Volume XI: Committed Demand Side Management Program Savings*.

TABLE 8
DAY-AHEAD PRICES IN CALIFORNIA'S POWER EXCHANGE -- 1998
Dollars per Megawatt Hour

Month Of Year		Minimum Price	Maximum Price	Average Price
April		\$0.00	\$ 36.74	\$23.31
May		\$0.00	\$ 37.37	\$12.50
June		\$0.00	\$ 38.02	\$13.26
July		\$0.00	\$151.10	\$35.58
August		\$6.79	\$163.01	\$42.76
Month Of Year	Time-of-Use Period	Minimum Price	Maximum Price	Average Price
April	Off Peak	\$ 0.00	\$ 31.44	\$19.80
	Winter Partial Peak	\$22.54	\$ 36.74	\$27.61
May	Off Peak	\$ 0.00	\$ 25.09	\$ 7.96
	Summer Partial Peak	\$ 0.00	\$ 33.11	\$18.59
	Summer On-Peak	\$ 4.50	\$ 37.37	\$19.19
June	Off Peak	\$ 0.00	\$ 24.99	\$ 7.90
	Summer Partial Peak	\$ 4.99	\$ 32.50	\$17.65
	Summer On-Peak	\$ 5.67	\$ 38.02	\$22.20
July	Off Peak	\$ 0.00	\$ 87.83	\$25.74
	Summer Partial Peak	\$ 1.96	\$102.19	\$36.77
	Summer On-Peak	\$10.00	\$151.10	\$57.53
August	Off Peak	\$ 6.79	\$ 51.47	\$27.15
	Summer Partial Peak	\$24.73	\$124.88	\$42.76
	Summer On-Peak	\$29.69	\$163.01	\$82.41

Note 1 The average PX price is weighted by hourly PX load: Average Price = $E(\text{Hourly Price times Hourly Load}) / E(\text{Hourly Load})$ over each time period.

Note 2 Off Peak Periods: Weekends, holidays and weekdays from 10 p.m. to 8 a.m.
Winter Partial Peak: Weekdays and non-holidays from 8 a.m. to 10 p.m.
Summer Partial Peak: Weekdays and non-holidays from 8 a.m. to Noon and 6 p.m. to 9 p.m.
Summer Peak: Weekdays and non-holidays from Noon to 6 p.m.

Note 3 Winter Months: October through April
Summer Months: May through September

Natural Gas Restructuring and its Impact

In January 1998, the CPUC initiated a rulemaking proceeding designed to unbundle utility services that could be offered competitively in the marketplace and increase customer choices for residential and small commercial customers. The proceeding recognizes the continuing convergence of the electricity and natural gas and as such is intended to ensure that a relatively consistent set of electricity and natural gas services exist for consumers and service providers.

Even with a consistent set of electricity and natural gas services, it is not likely that further gas industry restructuring will significantly change natural gas consumption patterns in California. This conclusion is based on several factors. First, the CPUC's natural gas OIR is targeted towards residential and small commercial customers, who do not have the same service options already available to larger natural gas customers. By comparison, **AB 1890** provided competitive options to all customers large and small for the first time, where none had been available before. Second, unlike in the electricity market where high electricity rates were a major stimulus for **AB 1890**, customer choice is the major driver for further gas restructuring.

Changes in energy consumption patterns will occur at the point when consumers must replace existing appliances. Incremental operating costs resulting from a given rate structure will be the main determinant. For example, customers replacing a water heater might choose a natural gas appliance over a competing fuel appliance if the operating cost is lower. Other consumers using wood for space heating may find it affordable to switch to natural gas. Customers with very low natural gas usage may decide to avoid a fixed charge by completely switching to electricity. These marginal decisions over time have a cumulative effect on consumption patterns. Future editions of this report will model various rate design scenarios so as to evaluate their impact on consumption.

TABLE 9
OUTLOOK OF ELECTRICITY PRICES
Cents per kWh (1995 \$)

	Residential Sector					Commercial Sector					Industrial Sector				
Year	PG&E	SMUD	SCE	LADWP	SDG&E	PG&E	SMUD	SCE	LADWP	SDG&E	PG&E	SMUD	SCE	LADWP	SDG&E
1980	8.55	9.67	7.82	9.95	3.88	9.67	4.53	11.80	10.02	16.45	7.82	3.07	10.60	9.25	14.34
1981	9.93	11.34	9.03	10.67	4.48	11.34	4.57	11.43	10.26	16.48	9.03	3.09	10.21	9.66	14.83
1982	9.55	10.68	8.86	10.47	4.30	10.68	3.83	12.10	9.58	17.38	8.86	3.69	10.89	8.98	17.64
1983	9.08	10.37	9.19	10.29	4.23	10.37	5.26	11.74	8.75	17.12	9.19	3.97	10.60	8.14	17.49
1984	10.75	12.19	10.93	11.52	4.99	12.19	5.28	11.59	8.70	17.35	10.93	3.97	10.57	8.09	17.12
1985	11.39	13.16	11.72	12.77	5.35	13.16	6.04	11.66	9.04	18.29	11.72	4.55	10.54	8.45	17.98
1986	11.30	13.02	10.71	12.44	5.19	13.02	6.90	11.78	9.10	16.46	10.71	5.39	10.44	8.44	14.17
1987	10.11	11.20	7.91	9.82	4.37	11.20	8.14	11.45	9.29	13.83	7.91	6.47	9.98	8.57	11.87
1988	10.81	10.89	7.42	9.59	4.38	10.89	8.74	11.36	9.59	11.95	7.42	6.92	9.36	8.68	9.74
1989	11.88	11.36	7.81	10.92	4.69	11.36	8.54	11.66	9.78	10.74	7.81	7.47	9.22	8.74	8.88
1990	12.16	9.43	12.32	10.21	12.00	11.44	9.91	11.45	9.85	10.04	7.69	8.43	8.69	8.36	8.36
1991	12.59	9.04	12.86	9.92	11.62	11.57	9.65	11.69	9.03	9.87	7.82	8.15	8.62	8.14	8.15
1992	12.88	8.81	13.04	9.88	11.52	11.92	9.11	11.61	9.25	9.66	7.97	7.87	8.23	8.37	7.87
1993	12.85	8.02	12.69	10.32	11.61	11.65	8.36	10.79	9.37	9.97	7.53	7.12	7.50	8.92	7.75
1994	12.78	8.20	12.63	10.20	10.94	11.51	8.31	10.68	9.96	9.65	7.35	7.31	7.51	8.43	7.41
1995	11.57	8.15	12.88	9.84	10.63	10.39	8.49	10.42	9.07	9.46	6.51	7.13	7.35	8.18	7.20
1996	11.69	8.14	12.18	9.65	10.61	10.00	8.09	9.28	8.90	9.44	6.25	6.96	6.48	8.02	7.12
1997	11.47	7.99	11.95	9.47	10.41	9.81	7.94	9.11	8.73	9.26	6.13	6.83	6.36	7.87	6.99
1998	10.09	7.81	10.51	9.25	9.16	9.32	7.76	8.74	8.54	8.73	5.99	6.68	6.21	7.69	6.83
1999	9.84	7.62	10.26	9.03	8.93	9.10	7.57	8.53	8.33	8.51	5.85	6.52	6.06	7.51	6.67
2000	9.58	7.42	9.99	8.79	8.70	8.86	7.37	8.30	8.11	8.29	5.69	6.35	5.90	7.31	6.49
2001	9.32	7.21	9.71	8.55	8.46	8.61	7.17	8.07	7.88	8.06	5.54	6.17	5.74	7.11	6.31
2002	7.90	6.14	8.38	6.78	8.19	6.69	5.30	6.47	5.55	6.90	4.73	4.20	5.10	4.44	5.18
2003	7.50	6.44	7.95	7.07	8.27	6.28	5.60	6.14	5.85	6.80	4.65	4.50	5.04	4.74	5.11
2004	7.61	6.77	8.01	7.40	8.54	6.50	5.93	6.31	6.17	7.10	4.81	4.83	5.17	5.06	5.43
2005	7.77	7.14	8.06	7.76	8.84	6.75	6.29	6.49	6.53	7.39	5.01	5.19	5.28	5.42	5.74
2006	7.96	7.54	8.23	8.16	9.19	7.04	6.69	6.76	6.93	7.75	5.23	5.59	5.49	5.82	6.13
2007	7.86	7.55	8.07	8.17	9.14	7.00	6.70	6.69	6.94	7.69	5.19	5.59	5.39	5.83	6.09
Percent Change in Price															
1990-96	-3.9%	-13.7%	-1.1%	-5.5%	-11.6%	-12.6%	-18.4%	-18.9%	-9.6%	-6.0%	-18.8%	-17.4%	-25.5%	-4.0%	-14.8%
1996-02	-32.4%	-24.6%	-31.2%	-29.7%	-22.8%	-33.0%	-34.5%	-30.3%	-37.6%	-26.9%	-24.4%	-39.7%	-21.2%	-44.6%	-27.2%
1996-07	-32.7%	-7.3%	-33.7%	-15.4%	-13.9%	-30.0%	-17.2%	-27.9%	-22.0%	-18.5%	-16.9%	-19.7%	-16.8%	-27.3%	-14.5%

*Historical Prices Through 1996

IV. ECONOMIC AND DEMOGRAPHIC CONDITIONS INFLUENCING ENERGY CONSUMPTION

As noted earlier in this report, energy consumption trends are significantly correlated to trends in economic and demographic activity. Table 10 identifies some of the economic and demographic factors influencing specific consumption trends. For example, growth in residential energy consumption is driven by population growth, particularly net migration. Vacancy rates and square footage requirements impact commercial energy consumption. Value of shipments along with energy intensities provide useful insight about industrial energy needs.

TABLE 10
PRINCIPAL ECONOMIC AND DEMOGRAPHIC FACTORS
INFLUENCING ENERGY CONSUMPTION TRENDS

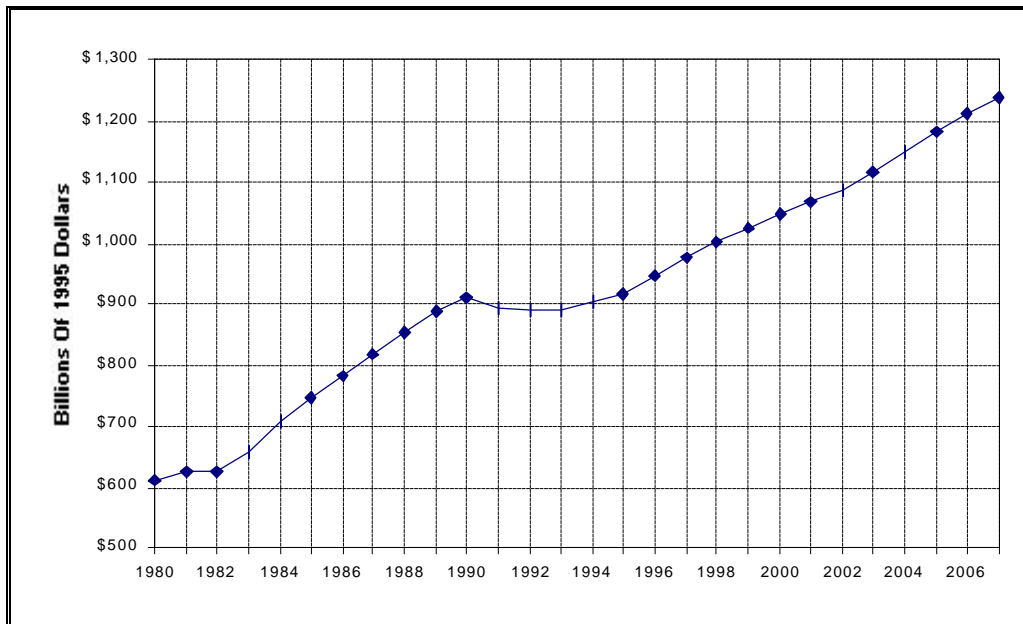
Residential	Commercial	Industrial
Population Net-Migration Persons per Household Household Income	Total Floor Space Total Sales Population Vacancy Rates	Value of Shipments Employment

Given the correlation between economic and demographic conditions and consumption, it is important to consider the outlook for some of these indicators. The California economy experienced rapid growth throughout the 1980s, as shown by the graph of California Gross State Product (GSP) in Figure 19. Prior to California's recession, real GSP grew at an annual rate of 5.7 percent. The recession had a substantial impact on economic activity in California, with real GSP from 1990 to 1993 contracting at an average annual rate of 0.7 percent.

The recession and its recovery have altered the structure of California's economy. For example, aerospace employment in California, primarily the five-county Los Angeles area, was permanently reduced as defense spending cuts were implemented. The Los Angeles regional economy lagged the rest of the state until early 1998. As California's economic recovery began in 1994, Silicon Valley led the state's growth. Most of the region's economic activity is in high technology, including computers and other electronic office equipment, communications equipment, and computer programming and software. In the Silicon Valley, the commercial office vacancy rate was 3 to 4 percent during 1997 and early 1998, and until the Asian economic crisis, most companies were increasing their labor force at 5 to 10 percent per year. In addition, residential housing prices have been rising rapidly in San Mateo and Santa Clara counties.

Since 1994, real GSP has been growing at an average annual rate of 1.5 percent through 1996, a much more modest rate of growth than prior to 1990. The energy forecasts in this outlook are based on the assumption that real GSP will grow at an average annual rate of 2.8 percent through 2007.

FIGURE 19
CALIFORNIA'S GROSS STATE PRODUCT¹³



Recent evidence about California's economy, as well as forecasts from different sources, indicate the rate of economic growth employed in these energy forecasts, though higher than the immediate past, is not overly optimistic. California's unemployment rate is approaching the national rate, and in some California metropolitan areas, unemployment is below the national rate. Total nonagricultural employment in California is growing at approximately 3 percent per year. Service sector employment is expected to continue to grow more rapidly than other sectors of the economy, including manufacturing and construction. A recent forecast from Data Resources/McGraw Hill¹⁴ estimates service sector employment growth at 3.3 percent per year through 2002. Service sector jobs include computer processing and software, motion pictures, personnel services and health services. Many of these jobs pay well and will contribute to personal income growth in California.

Residential Consumption

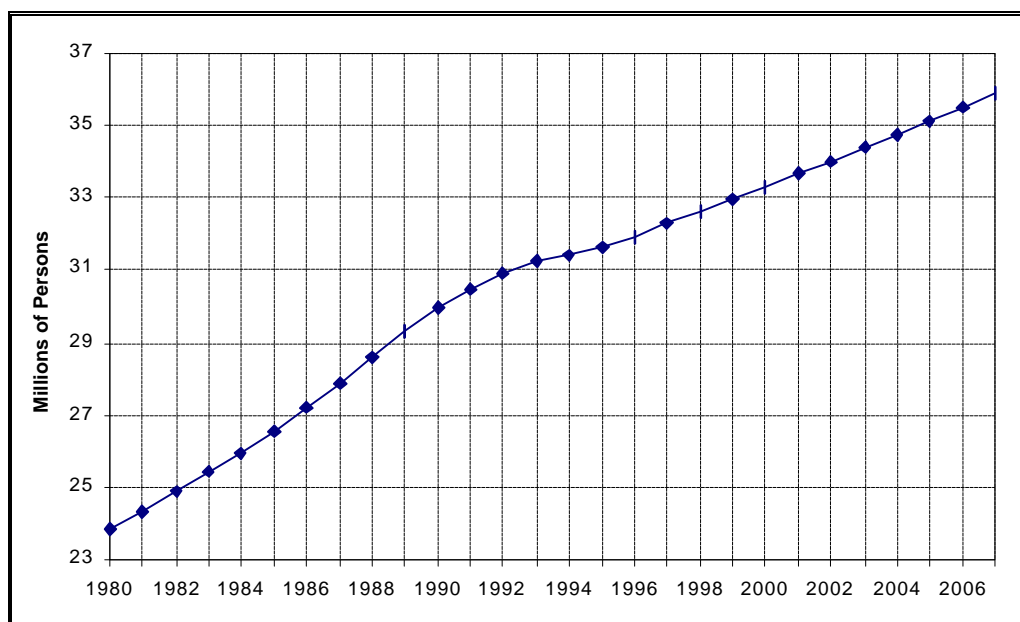
As the number of households in California rises, so does residential energy use. Population growth, including net migration, is a key determinant of residential energy use. The number of persons-per-household and appliance efficiency play important secondary roles. Figure 20 illustrates state population growth since 1980. Prior to 1990, population grew at an annual rate of

¹³ Data Resources Inc. (DRI), Trend Forecast--February 1997.

¹⁴ *ibid.*

2.6 percent. The rate of population growth slowed to 1.4 percent from 1990 to 1993. From 1993 to 1996, the population growth rate slowed even further to 0.7 percent.

FIGURE 20
CALIFORNIA'S TOTAL POPULATION¹⁵



Most of the slowdown in population growth in California in the early 1990s was due to changes in the rate and direction of migration, which are affected by economic conditions. Net migration out of California, resulting from job losses throughout the state, peaked in 1994 at 168,000 persons. The economic recovery has begun to attract job seekers again and UCLA's most recent forecast projects net in-migration to be 225,000 persons per year in 2000. This is roughly half of the net in-migration levels of the late 1980s. The forecasts contained in this outlook assume that California's population will grow at an annual average rate of 1.1 percent through 2007.

Commercial Consumption

The total square footage of commercial business space is an important factor affecting the amount of electricity and natural gas consumed by commercial customers. Commercial floor space includes uses such as small and large offices, retail stores, warehouses and schools. Consistent with other economic activity, the growth rate of total commercial space declined during the recession. After the recession, the market for commercial space recovered much more slowly than other economic activity. For example, from 1993 to 1994, net additions of large office space were effectively zero, and from 1994 to 1995, the available amount of large office space actually

¹⁵ *ibid.*

declined. The growth rate of retail square footage also slowed down to approximately one-third of its pre-recession level.

Industrial Consumption

Industrial electricity and natural gas consumption is primarily a function of industrial production and employment. Staff uses a variety of physical production indices and value of shipments to describe economic activity in each industry. Improvements in industrial energy efficiency are expected to increase from past levels at about one percent per year or slightly less.

The recession in the early 1990s was particularly hard on manufacturing (i.e., the assembly and process sectors) in California. Staff's outlook assumes robust growth in the value of shipments (in constant 1995 dollars) for the assembly sector of 4.1 percent per year between 1997 and 2007. A substantial portion of this growth is due to high-tech manufacturing of computers, computer components, and telecommunications equipment. California's process industries are expected to grow more slowly at 1.3 percent per year. Employment in this sector is not anticipated to rise as fast as output, reflecting improved productivity in many industrial sectors. Employment in the assembly industries is actually expected to decline slightly, while employment in process industries is expected to grow at only 0.4 percent annually.

V. BASIC DEFINITIONS AND MODEL DOCUMENTATION

This section is intended to be a reference tool for identifying the basic definitions upon which this outlook is based. We provide an overview of important geographic regions of the state and then define the key sectors.

Extent of Energy Consumption Data Disaggregation

In analyzing energy consumption patterns, the utility¹⁶ remains the basic unit of analysis for this outlook. It is the local utility that provides the bulk of energy service components to consumers and collects data from them. Within each utility, residential and commercial energy consumption patterns, which account for approximately two-thirds of all energy use, are influenced by weather within the various climate zones. Therefore, these two sectors are modeled by climate zone and results aggregated to the utility service/planning area. For readers interested in greater disaggregation, county-level consumption patterns are also provided. Historical county data are collected from the utilities; whereas, the county-level outlook is derived from a disaggregation of climate zone and utility level data. For readers interested in evaluating generation and transmission issues in the new electricity marketplace, the county-level data can be aggregated across regions consistent with congestion zones associated with the electricity transmission grid operated by the ISO.

¹⁶ In the case of the IOUs we are referring to the utility distribution company geographic region.

Recognizing the continuation of the existing utility service territories in the restructured marketplace, yearly consumption data are reported by eight electric service/planning areas and four natural gas distribution regions (Table 11). The geographic regions include the traditional areas served by each utility and in some cases extend to include municipalities and irrigation districts not served directly by the larger investor-owned utility. For example, the PG&E electric planning area includes the cities of Redding and Santa Clara, the Northern California Power Agency, and the irrigation districts of Modesto and Turlock. The SCE planning area includes the cities of Anaheim, Anza, Asuza, Banning, Colton, Riverside, and Vernon and the Metropolitan and Southern California Water Districts. For the purposes of this report, a planning area denotes a geographic region of an electric investor-owned utility in which there resides municipal utilities and/or irrigation districts. An electric service area denotes a geographic area for which a single utility provides electric distribution services. Natural gas service territories include municipal gas utilities.

TABLE 11
GEOGRAPHIC CONSUMPTION AREAS

Electricity Planning/Service Areas	Natural Gas Service Territories
Pacific Gas and Electric (PG&E)	Pacific Gas and Electric (PG&E)
Sacramento Municipal Utility District (SMUD)	Southern California Gas (SCG)
Southern California Edison (SCE)	San Diego Gas and Electric (SDG&E)
Los Angeles Department of Water and Power (LADWP)	Other Gas Territory (OTHER)
San Diego Gas and Electric (SDG&E)	
Cities of Burbank, Glendale, and Pasadena (BG&P)	
Department of Water Resources (DWR)	
Other Planning Area (OTHER)	

The OTHER planning area accounts for demand centers located in counties adjacent to the California-Oregon border, Mount Shasta, Lake Tahoe, and a portion of the Mojave Desert. Electric utility distribution companies serving these regions include: Imperial Irrigation District, Pacific Power and Light, Sierra Pacific Power, and the Surprise Valley Cooperative. Gas utilities in this category include: Washington Water and Power in the north and Southwest Gas Corporation in the south.

Customer Sector Definitions

Residential

Residential energy consumption in this report is grouped into three different housing types—single family, multi-family and mobile homes. For each housing type, some combination of electricity and/or natural gas consumption occurs in 24 individual end-uses (Table 12). In most cases, the end-uses being analyzed do not necessarily represent distinct appliance types. Electric space heating, for example, is one end-use category, but includes three types of heating

appliances—baseboard heaters, central heating systems, and heat pumps. Other end-uses, such as refrigerators and freezers, do characterize individual appliance end-uses.

TABLE 12
RESIDENTIAL END-USE AND FUEL TYPE CLASSIFICATIONS

End-Use	Description	Electric	Gas
CENTRAL A/C	Whole house air conditioning systems	X	X
ROOM A/C	Window air conditioners	X	
EVAP A/C	Evaporative coolers	X	
SPACE HEAT	Heat pumps, baseboard heaters and central heating systems	X	X
FURNACE FAN	Central heating and cooling furnace fans	X	
HOT WATER	Water heating for dishwashers	X	X
HOT WATER	Water heating for clothes washer	X	X
WATER HEATER	Basic water heating for all other uses	X	X
REFRIGERATION	Refrigerators	X	
FREEZER	Stand alone freezers	X	
COLOR TV	Major household appliance	X	
COOKING	Stove tops and ovens—excludes microwaves	X	X
DISHWASHER	Dishwasher motor only	X	
CLOTHES DRYER	Clothes dryer	X	X
CLOTHES WASHER	Washing machine motor	X	
SOLAR BACKUP	Backup for solar water heating systems	X	X
SOLAR PUMPS	Pumps on solar water heating systems	X	
WATER BED	Heating element for water beds	X	
MISCELLANEOUS	Miscellaneous uses including lighting and small appliances	X	X
POOL PUMP	Swimming pool water pump	X	
POOL HEATER	Water heating for swimming pools	X	X
POOL BACKUP	Backup for pool's solar water heating system, including pump	X	X
TUB PUMP	Hot tub water pump	X	
TUB WATER HEAT	Water heating for hot tubs	X	X

Commercial

Commercial energy consumption in this report is grouped into twelve building types. Each building type aggregates energy consumption resulting from economic activity surrounding the selling and distribution of final goods and services. Table 13 displays a breakdown of the twelve building types by Standard Industrial Classification (SIC) code. For each building type, energy consumption occurs within ten different end-uses. Table 14 displays the end-uses and their corresponding fuel types.

TABLE 13
COMMERCIAL BUILDING CLASSIFICATIONS

Building Type	SIC Codes Included
Office-Small < 30,000 Square Feet	074, 076, 078, 60-61, 62-67, 73
Restaurants	58
Retail Stores	52, 53, 55-57 (554), 59 (592)*
Food/Liquor Stores	54, 592
Warehouses	42 (4222), 50, 51 (514)
Refrigerated Warehouses	4222, 514
Schools	821, 835
Colleges/Trades	822, 824, 829
Health Care	805-809, 836
Hotel/Motel	70 (703)
Miscellaneous	554, 72, 75, 78, 79, 823, 84, 92
Office-Large >= 30,000 Square Feet	801-804, 81, 91, 93-96, 972

*Excluded industry subgroups in parentheses.

TABLE 14
COMMERCIAL END-USE AND FUEL TYPE CLASSIFICATIONS

End-Use	Description	Electricity	Natural Gas
Space Heat	Combinations of packaged and system space heat	X	X
Space Cooling	Combinations of packaged and system cooling	X	X
Ventilation	Ventilation systems	X	
Water heating	Water heaters and system boilers	X	X
Cooking	Major cooking appliances	X	X
Refrigeration	Major refrigeration systems and stand alone units	X	X
Indoor Lighting	Lighting systems, does not include desktop lamps	X	
Outdoor Lighting	Lighting systems	X	
Office Equipment	Faxes, computers, copiers, etc.	X	
Misc. Equipment	Miscellaneous plug load, including small refrigerators, desktop lamps, and other non-system energy using equipment.	X	X

Industrial

Industrial energy consumption is grouped into three categories: 1) process, 2) resource extraction (i.e., mining), and 3) assembly. Process industries refer to companies that use multiple energy sources to transform raw materials into commercial products. Energy is the critical component needed to power the motors, engines, boilers, dryers, compressors, refrigeration systems, and

other devices used to produce food, manufactured durable goods, as well as harvest, extract and recycle natural resources. Table 15 lists a variety of different areas where energy is used in the process industry.

TABLE 15
SELECTED ENERGY USES IN PROCESS INDUSTRIES

End-Uses	
Compressed air for equipment operation	Coating
Cooking	Printing
Melting and refining	Drying
Pumping of fluids as raw materials	Machining
Transporting products or components	Mining
Lighting	Heat Treatment
Production of gases	Heating
Ventilation and extraction	Packaging
Cooling	Cutting
Chemical reactions	Hydraulic pumping
Radiation	Filtration
Electrolysis	Pressure systems
Source: CEC Energy Efficiency Division, <i>Process Energy Sector Action Plan</i> , May 1997.	

While resource extraction industries are classified as process-related energy uses, Staff's assessment tools separate them from the rest of the process industry group. Resource extraction industries are those companies that extract fossil fuels (petroleum and natural gas), precious metals (iron, gold), and nonmetallic minerals (stone, sand, gravel, borate). The categories were separated from other process industries (petroleum refining, chemicals, pulp and paper, etc.) because they have different patterns of energy consumption and because mining is one of the state's largest consumers of energy.

Assembly industries are defined in this report to include companies whose primary activity is to shape unfinished but not raw materials, and assemble components to produce final goods in a non-continuous process production environment. These activities are much less energy intensive than activities for process and mining industries. Comparing Table 16 to Table 15, it is clear there are far fewer end-uses of energy in the assembly industry.

Table 17 lists the various industries included in each industrial category by SIC code. In most cases, consumption estimates are reported by two-digit SIC code. In industries where either considerable growth in energy consumption is foreseen or a major difference in consumption patterns exists among industries in the same two-digit SIC code, a three-digit SIC level is utilized. For example, SIC 35, industrial machinery and equipment, was disaggregated to allow specific evaluation of the energy consumption in the computer industry.

TABLE 16
EXAMPLES OF ENERGY USE IN ASSEMBLY INDUSTRIES

End-Uses	
Compressed air for equipment operation	Machining
Cooking	Packaging
Transporting products or components	Cutting
Lighting	
Cooling	
Heating	
Source: CEC Energy Efficiency Division.	

TABLE 17
INDUSTRIAL SECTOR DEFINITIONS BY SIC CODE

SIC	Process Industries
15	Construction
203	Canned, Frozen, Preserved Fruits, Vegetables, and Food Specialties
206	Sugar and Confectionery Products
24	Lumber and Wood Products
261	Pulp Mills
262-3	Paper and Paperboard Mills
29	Petroleum Refining and Related Industries
321-3	Glass and Glassware
324	Cement
Resource Extraction Industries	
10	Metal Mining
13	Oil and Gas Extraction
14	Mining and Quarrying of Non-Metallic Minerals
Assembly Industries	
20x	Food and Kindred Products (Except 203 and 206)
22	Textile Mill Products
23	Apparel and Other Textile Products
25	Furniture and Fixtures
26x	Paper and Allied Products (Except Pulp, Paper, and Paperboard Mills 261-263)
27	Printing and Publishing
28	Chemicals and Allied Products
308	Plastics Products
30x	Rubber Products
31	Leather and Leather Products
32x	Stone and Clay Products
33	Primary Metal Industries
34	Fabricated Metal Products
357	Computers and Office Equipment
35x	Industrial Machinery and Equipment (Except 357)
366	Communications Equipment
367	Electronic Components and Accessories
36x	Electronic and Other Electric Equipment (Except 366, 367)
37	Transportation Equipment
38	Instruments and Related Products
39	Miscellaneous Manufacturing

Model Documentation

The forecasts in this *Outlook* were prepared using end-use forecasting models developed at the Energy Commission, with the exception of the industrial sector, for which Staff used the INFORM model originally developed by the Electric Power Research Institute (EPRI). Staff also used EPRI's Hourly Electric Load Model (HELM) to determine peak electricity demand. Each model develops a forecast using a complex series of calculations that simultaneously consider economic factors, population, weather characteristics, changes in energy utilization, regulatory conditions, and recorded consumption. Detailed descriptions of the models used by Staff, with the exception of the industrial sector, are contained in a Staff report entitled *California Energy Demand: 1995-2015, Volume II Electricity Demand Forecasting Models*, July 1995, Publication Number P300-95-005. For a description of the industrial sector forecast methodologies refer to EPRI's INFORM documentation.

Section 350 Study

The system reliability study as mandated in AB 1890 may be found in the ISO report entitled *1998 Transmission Reliability Report*.¹⁷ Detailed analysis of supply and demand balances may be found in a supporting document entitled *Supply Adequacy in California and the WSCC*.¹⁸

¹⁷ Prepared for: The California State Legislature and The Electricity Oversight Board. Prepared by: The California Independent System Operator in Consultation with the **AB 1890** Report Steering Committee.

¹⁸ California Energy Commission's Staff Draft prepared by Albert Belostotsky and Pat McAuliffe, March 3, 1998.

APPENDIX A: ELECTRIC CONSUMPTION DATA

This appendix provides recorded electric end-use consumption, by sector, for the entire State of California, major service/planning areas, and counties. The appendix also includes estimates of system losses and private supply for the State and major service/planning areas. Because of the dynamics of the restructured marketplace, it is difficult to predict the cost effectiveness of self-generation over the next ten years. It may, however, be reasonable to assume that since customers face the same rate structures through 2002 as they do today, and only a small portion of their entire electricity service is opened to competition, self-generation that was economical in the past will probably be economical through 2002. Staff therefore assumed the level of self-generation used to derive the adopted forecasts in *1996 Electricity Report (ER 96)* are still applicable. For PG&E, SGD&E, and LADWP the *ER 96* historic values were updated through 1996. SCE did not provide updated values. SMUD, BG&P, OTHER, and DWR do not report self-generation estimates.

Losses were estimated using loss factors from the *ER 96* adopted forecasts. The applicability of these loss factors in the restructured marketplace is somewhat unknown. The three utility distribution companies have been posting hourly distribution loss factors since April 1, 1998. These loss factors along with transmission losses reported by the Independent System Operator (ISO) should provide the information needed to verify the appropriateness of Staff's assumed loss factors.

TABLE A1
STAFF'S STATEWIDE OUTLOOK FOR CALIFORNIA
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agricultural	Electric Vehicles	Total
1980	52,086	49,762	7,915	1,671	25,004	12,280	4,959	13,301	-	166,979
1981	53,499	51,433	8,077	1,630	25,300	11,924	5,660	16,130	-	173,655
1982	52,578	51,326	8,586	1,695	23,700	11,282	5,948	14,369	-	169,484
1983	54,580	53,114	9,036	1,599	25,078	11,684	6,188	11,499	-	172,779
1984	57,566	56,823	9,701	1,532	26,138	11,850	6,829	15,122	-	185,562
1985	58,531	58,739	10,302	1,533	26,742	12,263	7,175	17,236	-	192,521
1986	58,454	61,548	9,918	1,504	27,141	12,524	6,326	15,738	-	193,154
1987	61,269	65,167	10,916	1,529	28,141	13,167	6,265	16,425	-	202,880
1988	64,035	68,120	11,388	1,479	29,629	13,942	6,349	18,096	-	213,038
1989	65,319	71,035	11,930	1,492	30,453	14,047	6,386	19,127	-	219,788
1990	67,669	74,562	12,233	1,529	30,693	14,053	6,449	20,849	-	228,038
1991	67,145	74,296	12,469	1,566	29,995	13,928	6,516	16,345	-	222,260
1992	69,227	77,929	12,798	1,624	30,049	13,599	6,278	15,483	-	226,988
1993	68,426	79,152	13,008	1,641	29,603	13,750	6,125	15,918	-	227,624
1994	69,781	78,546	13,655	1,634	29,345	14,149	6,030	16,957	-	230,097
1995	69,767	80,527	14,171	1,611	30,576	14,042	5,976	14,321	-	230,990
1996	72,284	83,581	13,666	1,648	31,076	13,983	6,032	16,898	-	239,168
1997	73,759	86,593	13,506	1,680	32,731	14,049	6,217	17,690	-	246,225
1998	72,784	85,965	14,212	1,677	32,877	14,352	6,095	21,964	-	249,926
1999	73,579	88,014	14,367	1,695	33,645	14,536	6,117	22,228	-	254,181
2000	74,422	89,622	14,522	1,714	34,319	14,649	6,085	22,499	-	257,832
2001	75,239	91,242	14,694	1,732	35,072	14,793	6,079	22,711	-	261,563
2002	76,098	94,493	14,866	1,751	36,151	15,107	6,070	22,889	-	267,425
2003	77,004	96,164	15,027	1,770	37,587	15,573	6,058	23,115	356	272,654
2004	77,931	96,810	15,216	1,790	39,266	16,150	6,045	23,321	739	277,269
2005	78,920	98,982	15,411	1,810	40,842	16,734	6,046	23,476	1,083	283,304
2006	79,929	99,478	15,573	1,831	42,126	17,138	6,073	23,631	1,393	287,172
2007	80,971	100,696	15,704	1,851	43,301	17,469	6,094	23,723	1,664	291,473
Average Annual Growth Rates										
1980-90	2.99%	4.98%	5.46%	-0.85%	2.28%	1.44%	3.00%	5.67%	na	3.66%
1990-97	1.29%	2.31%	1.49%	1.41%	0.95%	0.00%	-0.51%	-2.16%	na	1.14%
1997-07	0.98%	1.63%	1.63%	1.02%	3.23%	2.43%	-0.20%	3.41%	na	1.84%

*Historical data through 1997

TABLE A2
STAFF'S STATEWIDE OUTLOOK FOR CALIFORNIA
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Average Loss Factor 8.6%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Losses			
1980	166,979	14,449	80	14,369	181,348	920	180,427
1981	173,655	14,937	81	14,855	188,510	934	187,576
1982	169,484	14,592	104	14,488	183,972	1,231	182,741
1983	172,779	14,998	188	14,810	187,589	2,142	185,447
1984	185,562	16,055	215	15,840	201,402	2,459	198,943
1985	192,521	16,531	246	16,284	208,806	2,877	205,928
1986	193,154	16,573	338	16,236	209,389	3,844	205,545
1987	202,880	17,424	482	16,942	219,821	5,466	214,355
1988	213,038	18,225	666	17,558	230,596	7,665	222,931
1989	219,788	18,724	745	17,979	237,767	8,456	229,311
1990	228,038	19,360	779	18,582	246,620	8,785	237,835
1991	222,260	19,063	819	18,244	240,503	9,156	231,347
1992	226,988	19,473	815	18,658	245,647	9,150	236,497
1993	227,624	19,562	933	18,628	246,252	10,444	235,808
1994	230,097	19,693	1,013	18,680	248,778	11,136	237,642
1995	230,990	19,880	1,024	18,856	249,846	11,216	238,630
1996	239,168	20,493	1,086	19,407	258,575	11,875	246,700
1997	246,225	21,066	1,083	19,983	266,208	11,862	254,346
1998	249,926	21,230	1,101	20,129	270,055	12,060	257,995
1999	254,181	21,583	1,117	20,467	274,648	12,232	262,415
2000	257,832	21,894	1,130	20,764	278,596	12,387	266,208
2001	261,563	22,213	1,143	21,070	282,633	12,537	270,096
2002	267,425	22,711	1,155	21,556	288,980	12,675	276,305
2003	272,654	23,149	1,155	21,993	294,647	12,675	281,972
2004	277,269	23,538	1,155	22,382	299,652	12,675	286,976
2005	283,304	24,065	1,155	22,909	306,213	12,675	293,538
2006	287,172	24,392	1,155	23,237	310,409	12,675	297,733
2007	291,473	24,757	1,155	23,601	315,074	12,675	302,399
Average Annual Growth Rates							
1980-90	3.66%	3.40%	-	2.93%	3.60%	-	3.18%
1990-97	1.14%	1.26%	-	1.08%	1.13%	-	0.99%
1997-07	1.84%	1.75%	-	1.81%	1.84%	-	1.89%

*Historical data through 1997

TABLE A3
STAFF'S OUTLOOK FOR THE PG&E ELECTRIC PLANNING AREA
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agriculture	Electric Vehicles	Total
1980	21,424	17,793	3,427	515	8,782	6,650	1,863	5,743	-	66,197
1981	21,632	18,312	3,437	484	8,902	6,183	2,384	6,318	-	67,653
1982	21,116	18,328	3,644	465	8,643	5,758	2,850	5,237	-	66,043
1983	21,858	19,302	3,760	431	9,081	6,136	3,050	4,879	-	68,497
1984	22,883	20,373	4,248	416	9,549	6,240	3,314	6,319	-	73,341
1985	23,292	21,221	4,624	424	9,709	6,430	3,599	6,319	-	75,617
1986	23,180	21,897	4,093	422	9,804	6,657	3,040	5,301	-	74,394
1987	24,278	23,429	4,637	417	10,144	6,974	3,034	6,048	-	78,962
1988	25,041	24,674	4,576	431	10,658	7,258	3,105	6,398	-	82,141
1989	25,389	26,019	4,699	435	11,169	7,223	3,114	6,482	-	84,529
1990	25,844	27,304	4,795	445	11,288	7,502	3,111	6,518	-	86,806
1991	26,308	27,566	4,899	476	11,125	7,410	3,253	5,893	-	86,929
1992	26,412	28,759	5,016	486	11,029	7,286	3,254	6,083	-	88,326
1993	26,781	29,176	5,105	507	11,085	7,527	3,204	5,855	-	89,239
1994	27,013	29,203	4,996	509	11,089	7,751	3,243	5,778	-	89,582
1995	27,080	29,942	5,092	527	11,926	7,817	2,993	5,385	-	90,763
1996	28,280	30,908	5,144	542	12,058	7,579	2,974	5,728	-	93,213
1997	28,994	32,317	5,008	559	12,704	7,914	3,029	5,978	-	96,502
1998	28,199	32,103	5,472	555	12,916	7,792	2,996	6,470	-	96,503
1999	28,489	32,665	5,534	561	13,292	7,893	3,021	6,620	-	98,075
2000	28,795	33,245	5,600	568	13,632	7,951	3,001	6,776	-	99,569
2001	29,069	33,851	5,669	575	14,006	8,027	2,999	6,894	-	101,091
2002	29,354	34,236	5,734	582	14,498	8,195	3,005	6,990	-	102,594
2003	29,661	34,962	5,801	588	15,100	8,441	3,000	7,119	36	104,706
2004	29,970	35,223	5,870	595	15,769	8,750	2,987	7,235	74	106,473
2005	30,306	36,969	5,943	602	16,415	9,067	2,978	7,309	108	109,697
2006	30,648	37,152	6,005	609	16,985	9,293	2,996	7,387	139	111,215
2007	31,005	37,573	6,051	617	17,528	9,478	3,005	7,422	166	112,845
Average Annual Growth Rates										
1980-90	2.06%	5.35%	3.99%	-1.36%	2.85%	1.28%	6.70%	1.35%	na	3.11%
1990-97	1.74%	2.62%	0.64%	3.66%	1.79%	0.78%	-0.38%	-1.18%	na	1.60%
1997-07	0.69%	1.63%	2.08%	1.03%	3.80%	1.98%	-0.08%	2.42%	na	1.69%

*Historical data through 1997

TABLE A4
STAFF'S OUTLOOK FOR THE PG&E ELECTRIC PLANNING AREA
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Loss Factor 9.6%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Lossess			
1980	66,197	6,355	61	6,294	72,492	631	71,860
1981	67,653	6,495	61	6,433	74,087	638	73,449
1982	66,043	6,340	70	6,270	72,313	728	71,585
1983	68,497	6,576	91	6,485	74,982	948	74,034
1984	73,341	7,041	84	6,957	80,298	874	79,424
1985	75,617	7,259	98	7,161	82,778	1,024	81,754
1986	74,394	7,142	162	6,980	81,374	1,686	79,688
1987	78,962	7,580	263	7,317	86,279	2,742	83,537
1988	82,141	7,886	327	7,559	89,700	3,402	86,298
1989	84,529	8,115	369	7,746	92,275	3,843	88,433
1990	86,806	8,333	383	7,950	94,757	3,992	90,764
1991	86,929	8,345	398	7,947	94,877	4,145	90,732
1992	88,326	8,479	402	8,077	96,403	4,188	92,215
1993	89,239	8,567	500	8,067	97,307	5,203	92,104
1994	89,582	8,600	528	8,072	97,654	5,498	92,156
1995	90,763	8,713	528	8,185	98,948	5,498	93,450
1996	93,213	8,948	598	8,351	101,563	6,228	95,335
1997	96,502	9,264	586	8,678	105,180	6,102	99,078
1998	96,503	9,264	594	8,670	105,173	6,185	98,988
1999	98,075	9,415	599	8,816	106,891	6,240	100,651
2000	99,569	9,559	602	8,956	108,525	6,275	102,250
2001	101,091	9,705	605	9,100	110,190	6,302	103,888
2002	102,594	9,849	606	9,243	111,837	6,316	105,521
2003	104,706	10,052	606	9,445	114,152	6,316	107,836
2004	106,473	10,221	606	9,615	116,088	6,316	109,772
2005	109,697	10,531	606	9,925	119,622	6,316	113,306
2006	111,215	10,677	606	10,070	121,285	6,316	114,969
2007	112,845	10,833	606	10,227	123,071	6,316	116,755
Average Annual Growth Rates							
1980-90	3.11%	3.11%	-	2.63%	3.07%	-	2.63%
1990-97	1.60%	1.60%	-	1.31%	1.57%	-	1.31%
1997-07	1.69%	1.69%	-	1.78%	1.70%	-	1.78%

*Historical data through 1997

TABLE A5
STAFF'S OUTLOOK FOR SACRAMENTO MUNICIPAL UTILITY DISTRICT
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agriculture	Electric Vehicles	Total
1980	2,587	2,012	287	56	110	138	50	112	-	5,352
1981	2,794	2,078	334	56	104	148	57	122	-	5,694
1982	2,781	2,113	323	58	108	133	57	108	-	5,681
1983	2,910	2,142	406	60	137	143	63	94	-	5,954
1984	3,086	2,269	422	59	189	152	69	113	-	6,360
1985	3,193	2,500	485	61	300	151	78	115	-	6,882
1986	3,107	2,767	462	57	306	142	71	102	-	7,015
1987	3,229	3,103	486	59	202	148	78	115	-	7,420
1988	3,326	3,123	521	60	342	122	78	106	-	7,678
1989	3,359	3,194	560	62	481	96	78	98	-	7,927
1990	3,611	3,266	597	67	530	99	81	108	-	8,358
1991	3,603	3,173	624	68	595	74	92	120	-	8,350
1992	3,626	3,297	614	68	600	97	63	131	-	8,497
1993	3,636	3,300	548	68	575	111	63	134	-	8,435
1994	3,662	3,284	496	71	563	129	66	146	-	8,418
1995	3,604	3,343	545	72	537	143	74	140	-	8,458
1996	3,812	3,406	549	75	576	157	80	151	-	8,805
1997	3,839	3,540	577	75	584	151	85	155	-	9,006
1998	3,813	3,591	544	77	614	166	86	151	-	9,041
1999	3,866	3,668	549	78	632	171	87	153	-	9,205
2000	3,927	3,746	555	80	648	174	89	155	-	9,375
2001	3,992	3,826	562	81	662	176	90	157	-	9,546
2002	4,059	4,067	569	82	678	178	91	159	-	9,882
2003	4,128	4,094	576	83	698	180	92	161	18	10,031
2004	4,197	4,120	584	85	721	183	95	163	37	10,185
2005	4,270	4,145	593	86	742	185	98	165	54	10,338
2006	4,345	4,167	603	88	757	186	100	167	70	10,483
2007	4,420	4,223	611	89	771	188	102	168	83	10,657
Average Annual Growth Rates										
1980-90	3.96%	6.23%	10.76%	1.93%	38.10%	-2.85%	6.34%	-0.35%	na	5.62%
1990-97	0.90%	1.20%	-0.47%	1.84%	1.46%	7.56%	0.60%	6.34%	na	1.11%
1997-07	1.52%	1.93%	0.59%	1.84%	3.20%	2.42%	2.07%	0.84%	na	1.83%

*Historical data through 1997

TABLE A6
STAFF'S OUTLOOK FOR SACRAMENTO MUNICIPAL UTILITY DISTRICT
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Loss Factor 6.4%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Losses			
1980	5,352	343	-	343	5,695	-	5,695
1981	5,694	364	-	364	6,059	-	6,059
1982	5,681	364	-	364	6,045	-	6,045
1983	5,954	381	-	381	6,335	-	6,335
1984	6,360	407	-	407	6,767	-	6,767
1985	6,882	440	-	440	7,322	-	7,322
1986	7,015	449	-	449	7,464	-	7,464
1987	7,420	475	-	475	7,895	-	7,895
1988	7,678	491	-	491	8,170	-	8,170
1989	7,927	507	-	507	8,435	-	8,435
1990	8,358	535	-	535	8,893	-	8,893
1991	8,350	534	-	534	8,885	-	8,885
1992	8,497	544	-	544	9,041	-	9,041
1993	8,435	540	-	540	8,974	-	8,974
1994	8,418	539	-	539	8,957	-	8,957
1995	8,458	541	-	541	8,999	-	8,999
1996	8,805	564	-	564	9,369	-	9,369
1997	9,006	576	-	576	9,582	-	9,582
1998	9,041	579	-	579	9,620	-	9,620
1999	9,205	589	-	589	9,794	-	9,794
2000	9,375	600	-	600	9,975	-	9,975
2001	9,546	611	-	611	10,157	-	10,157
2002	9,882	632	-	632	10,514	-	10,514
2003	10,031	642	-	642	10,673	-	10,673
2004	10,185	652	-	652	10,837	-	10,837
2005	10,338	662	-	662	11,000	-	11,000
2006	10,483	671	-	671	11,154	-	11,154
2007	10,657	682	-	682	11,339	-	11,339
Average Annual Growth Rates							
1980-90	5.62%	5.62%	-	5.62%	5.62%	-	5.62%
1990-97	1.11%	1.11%	-	1.11%	1.11%	-	1.11%
1997-07	1.83%	1.83%	-	1.83%	1.83%	-	1.83%

*Historical data through 1997

TABLE A7
STAFF'S OUTLOOK FOR THE SCE ELECTRIC PLANNING AREA
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agriculture	Electric Vehicles	Total
1980	16,965	17,364	2,259	636	11,981	4,277	2,641	3,500	-	59,624
1981	17,710	17,956	2,299	621	12,135	4,340	2,781	3,753	-	61,594
1982	17,389	17,857	2,580	707	10,981	4,155	2,600	3,231	-	59,501
1983	18,205	18,408	2,721	652	11,809	4,227	2,563	3,423	-	62,006
1984	19,395	19,778	2,896	618	12,240	4,117	2,949	4,616	-	66,608
1985	19,751	20,132	3,004	633	12,588	4,425	3,003	4,667	-	68,203
1986	19,877	21,284	3,208	618	12,701	4,451	2,733	4,623	-	69,496
1987	20,894	22,379	3,365	651	13,384	4,811	2,700	4,816	-	72,999
1988	22,124	23,531	3,545	595	14,048	5,253	2,735	4,868	-	76,698
1989	22,620	24,636	3,794	609	14,310	5,329	2,761	4,359	-	78,417
1990	23,684	25,895	3,902	632	14,364	5,159	2,798	5,240	-	81,673
1991	23,039	25,758	3,874	632	13,926	5,052	2,712	5,231	-	80,223
1992	24,210	27,056	4,081	678	14,141	4,923	2,509	4,443	-	82,041
1993	23,362	26,959	4,021	666	13,960	4,841	2,454	4,871	-	81,133
1994	24,190	26,652	4,764	659	13,880	4,973	2,326	5,355	-	82,800
1995	24,097	27,120	5,053	618	14,150	4,971	2,363	4,482	-	82,855
1996	24,738	28,498	4,706	633	14,587	4,871	2,444	5,048	-	85,525
1997	25,141	29,672	4,610	646	15,401	4,601	2,556	5,196	-	87,824
1998	25,266	29,136	4,970	650	15,333	5,001	2,459	5,285	-	88,100
1999	25,596	30,173	5,051	658	15,633	5,071	2,455	5,379	-	90,017
2000	25,941	30,757	5,131	667	15,877	5,113	2,437	5,472	-	91,395
2001	26,261	31,345	5,216	676	16,157	5,172	2,428	5,545	-	92,801
2002	26,601	32,844	5,299	685	16,603	5,296	2,413	5,606	-	95,347
2003	26,968	33,601	5,378	694	17,239	5,478	2,400	5,683	199	97,641
2004	27,342	33,885	5,454	703	18,008	5,702	2,390	5,752	414	99,651
2005	27,737	34,188	5,532	713	18,713	5,921	2,388	5,813	607	101,610
2006	28,138	34,410	5,593	723	19,243	6,066	2,387	5,872	780	103,211
2007	28,550	34,901	5,643	733	19,708	6,186	2,390	5,915	932	104,959
Average Annual Growth Rates										
1980-90	3.96%	4.91%	7.27%	-0.08%	1.99%	2.06%	0.59%	4.97%	na	3.70%
1990-97	0.88%	2.08%	2.59%	0.34%	1.03%	-1.54%	-1.23%	-0.12%	na	1.08%
1997-07	1.36%	1.76%	2.24%	1.33%	2.80%	3.45%	-0.65%	1.38%	na	1.95%

*Historical data through 1997

TABLE A8
STAFF'S OUTLOOK FOR THE SCE ELECTRIC PLANNING AREA
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Loss Factor 6.8%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Losses			
1980	59,624	4,054	20	4,035	63,659	289	63,370
1981	61,594	4,188	20	4,168	65,763	296	65,466
1982	59,501	4,046	33	4,013	63,514	492	63,022
1983	62,006	4,216	62	4,154	66,161	914	65,246
1984	66,608	4,529	75	4,454	71,063	1,103	69,960
1985	68,203	4,638	87	4,550	72,753	1,286	71,467
1986	69,496	4,726	97	4,629	74,124	1,428	72,696
1987	72,999	4,964	122	4,842	77,841	1,790	76,051
1988	76,698	5,215	205	5,010	81,709	3,019	78,690
1989	78,417	5,332	217	5,115	83,532	3,199	80,334
1990	81,673	5,554	225	5,329	87,002	3,308	83,694
1991	80,223	5,455	229	5,226	85,449	3,363	82,086
1992	82,041	5,579	232	5,347	87,388	3,408	83,979
1993	81,133	5,517	251	5,266	86,399	3,689	82,711
1994	82,800	5,630	254	5,377	88,176	3,730	84,446
1995	82,855	5,634	254	5,380	88,235	3,730	84,505
1996	85,525	5,816	254	5,562	91,087	3,730	87,357
1997	87,824	5,972	259	5,713	93,537	3,805	89,732
1998	88,100	5,991	264	5,727	93,827	3,881	89,946
1999	90,017	6,121	269	5,852	95,869	3,959	91,910
2000	91,395	6,215	275	5,940	97,336	4,038	93,298
2001	92,801	6,310	280	6,030	98,831	4,119	94,712
2002	95,347	6,484	286	6,198	101,545	4,201	97,344
2003	97,641	6,640	286	6,354	103,995	4,201	99,794
2004	99,651	6,776	286	6,491	106,141	4,201	101,940
2005	101,610	6,909	286	6,624	108,234	4,201	104,033
2006	103,211	7,018	286	6,733	109,944	4,201	105,743
2007	104,959	7,137	286	6,852	111,810	4,201	107,609
Average Annual Growth Rates							
1980-90	3.70%	3.70%	-	3.21%	3.67%	-	3.21%
1990-97	1.08%	1.08%	-	1.03%	1.07%	-	1.03%
1997-07	1.95%	1.95%	-	1.99%	1.95%	-	1.99%

*Historical data through 1997

TABLE A9
STAFF'S OUTLOOK FOR LOS ANGELES DEPARTMENT OF WATER AND POWER
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agriculture	Electric Vehicles	Total
1980	5,357	7,023	818	343	2,637	1,060	318	113	-	17,669
1981	5,587	7,346	848	350	2,615	1,112	344	137	-	18,340
1982	5,529	7,311	856	346	2,559	1,114	343	125	-	18,184
1983	5,794	7,433	927	343	2,669	1,052	392	112	-	18,722
1984	6,157	7,969	928	328	2,684	1,185	370	156	-	19,777
1985	6,092	8,147	948	308	2,641	1,116	363	145	-	19,760
1986	6,033	8,556	968	303	2,637	1,143	317	137	-	20,094
1987	6,222	8,945	1,130	297	2,596	1,118	307	157	-	20,772
1988	6,482	9,175	1,140	297	2,698	1,170	276	202	-	21,439
1989	6,601	9,218	1,190	292	2,570	1,265	239	180	-	21,554
1990	6,835	9,634	1,174	290	2,501	1,172	209	156	-	21,971
1991	6,620	9,441	1,208	291	2,445	1,279	217	133	-	21,634
1992	7,000	9,692	1,183	290	2,354	1,189	190	155	-	22,053
1993	6,726	10,410	1,349	295	2,156	1,162	168	130	-	22,396
1994	6,723	9,899	1,348	291	2,014	1,191	189	150	-	21,805
1995	6,788	10,362	1,411	291	2,213	1,009	311	140	-	22,526
1996	6,916	10,596	1,300	292	2,112	1,268	316	175	-	22,975
1997	7,104	10,539	1,293	292	2,162	1,275	324	180	-	23,170
1998	7,009	10,870	1,365	292	2,196	1,283	322	167	-	23,503
1999	7,012	11,053	1,380	293	2,226	1,291	322	170	-	23,748
2000	7,022	11,237	1,394	293	2,259	1,299	322	174	-	23,999
2001	7,063	11,415	1,410	293	2,293	1,306	322	177	-	24,280
2002	7,109	12,095	1,424	294	2,345	1,326	321	179	-	25,094
2003	7,157	12,125	1,438	294	2,419	1,360	322	182	77	25,374
2004	7,210	12,156	1,457	295	2,511	1,400	323	185	160	25,697
2005	7,266	12,185	1,478	295	2,597	1,443	325	188	234	26,010
2006	7,324	12,214	1,495	296	2,662	1,473	327	191	301	26,282
2007	7,384	12,330	1,509	296	2,720	1,497	329	193	359	26,619
Average Annual Growth Rates										
1980-90	2.76%	3.72%	4.36%	-1.55%	-0.51%	1.05%	-3.43%	3.74%	na	2.43%
1990-97	0.56%	1.34%	1.44%	0.11%	-1.94%	1.26%	7.84%	2.23%	na	0.78%
1997-07	0.39%	1.70%	1.67%	0.14%	2.58%	1.74%	0.15%	0.72%	na	1.49%

*Historical data through 1997

TABLE A10
STAFF'S OUTLOOK FOR LOS ANGELES DEPARTMENT OF WATER AND POWER
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Loss Factor 13.5%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Lossess			
1980	17,669	2,385	-	2,385	20,055	-	20,055
1981	18,340	2,476	-	2,476	20,816	-	20,816
1982	18,184	2,455	-	2,455	20,639	-	20,639
1983	18,722	2,528	31	2,496	21,219	230	20,989
1984	19,777	2,670	46	2,624	22,401	339	22,062
1985	19,760	2,668	43	2,625	22,385	317	22,068
1986	20,094	2,713	57	2,656	22,750	423	22,327
1987	20,772	2,804	66	2,738	23,510	488	23,023
1988	21,439	2,894	97	2,797	24,236	720	23,515
1989	21,554	2,910	123	2,787	24,341	913	23,428
1990	21,971	2,966	137	2,829	24,799	1,018	23,781
1991	21,634	2,921	159	2,761	24,395	1,178	23,217
1992	22,053	2,977	149	2,828	24,880	1,107	23,773
1993	22,396	3,023	154	2,870	25,266	1,137	24,129
1994	21,805	2,944	202	2,742	24,547	1,497	23,050
1995	22,526	3,041	214	2,827	25,352	1,587	23,765
1996	22,975	3,102	207	2,895	25,870	1,530	24,340
1997	23,170	3,128	211	2,917	26,087	1,561	24,526
1998	23,503	3,173	215	2,958	26,461	1,592	24,869
1999	23,748	3,206	219	2,987	26,735	1,624	25,111
2000	23,999	3,240	224	3,016	27,015	1,657	25,359
2001	24,280	3,278	228	3,050	27,330	1,690	25,640
2002	25,094	3,388	233	3,155	28,248	1,724	26,525
2003	25,374	3,425	233	3,193	28,566	1,724	26,843
2004	25,697	3,469	233	3,236	28,933	1,724	27,210
2005	26,010	3,511	233	3,279	29,289	1,724	27,565
2006	26,282	3,548	233	3,315	29,598	1,724	27,874
2007	26,619	3,594	233	3,361	29,980	1,724	28,256
Average Annual Growth Rates							
1980-90	2.43%	2.43%	-	1.86%	2.37%	-	1.86%
1990-97	0.78%	0.78%	-	0.45%	0.74%	-	0.45%
1997-07	1.49%	1.49%	-	1.52%	1.49%	-	1.52%

*Historical data through 1997

TABLE A11
STAFF'S OUTLOOK FOR SDG&E'S ELECTRIC SERVICE AREA
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agriculture	Electric Vehicles	Total
1980	3,884	3,719	968	78	806	20	60	195	-	9,730
1981	3,852	3,778	987	76	866	19	69	229	-	9,875
1982	3,862	3,754	1,013	71	838	17	71	197	-	9,823
1983	3,912	3,919	1,036	68	842	21	79	197	-	10,073
1984	4,058	4,390	1,009	69	885	22	85	241	-	10,760
1985	4,252	4,616	1,019	69	909	16	85	215	-	11,180
1986	4,325	4,894	951	69	1,087	14	105	226	-	11,671
1987	4,641	5,121	1,013	69	1,197	14	97	215	-	12,367
1988	4,930	5,319	1,297	67	1,273	16	96	240	-	13,237
1989	5,146	5,659	1,320	66	1,335	20	129	254	-	13,929
1990	5,423	6,049	1,362	66	1,463	23	171	240	-	14,798
1991	5,335	5,939	1,446	69	1,461	21	164	207	-	14,642
1992	5,611	6,478	1,485	69	1,501	24	158	213	-	15,540
1993	5,551	6,493	1,524	70	1,457	21	123	212	-	15,451
1994	5,736	6,611	1,565	70	1,450	20	106	233	-	15,791
1995	5,731	6,747	1,557	71	1,437	21	131	229	-	15,923
1996	5,937	7,106	1,489	71	1,436	23	111	258	-	16,432
1997	6,125	7,389	1,545	72	1,569	26	123	286	-	17,134
1998	5,936	7,071	1,403	73	1,498	24	118	259	-	16,381
1999	6,021	7,201	1,389	74	1,534	24	117	267	-	16,627
2000	6,109	7,325	1,374	75	1,569	24	120	275	-	16,872
2001	6,193	7,446	1,364	76	1,614	25	122	285	-	17,125
2002	6,280	7,724	1,362	78	1,679	25	122	294	-	17,564
2003	6,363	7,827	1,353	79	1,768	26	124	304	18	17,861
2004	6,451	7,849	1,365	80	1,876	26	128	313	37	18,126
2005	6,545	7,877	1,374	81	1,979	27	133	322	54	18,393
2006	6,643	7,896	1,382	82	2,069	28	136	330	70	18,637
2007	6,746	7,993	1,392	84	2,154	28	139	335	83	18,954
Average Annual Growth Rates										
1980-90	3.96%	6.27%	4.08%	-1.47%	8.14%	1.16%	18.51%	2.35%	na	5.21%
1990-97	1.85%	3.16%	1.92%	1.16%	1.04%	1.94%	-4.02%	2.69%	na	2.26%
1997-07	1.01%	0.82%	-0.99%	1.66%	3.72%	0.98%	1.28%	1.73%	na	1.06%

*Historical data through 1997

TABLE A12
STAFF'S OUTLOOK FOR SDG&E'S ELECTRIC SERVICE AREA
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Loss Factor 7.09%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Losses			
1980	9,730	690	-	690	10,419	-	10,419
1981	9,875	700	-	700	10,576	-	10,576
1982	9,823	696	1	696	10,519	11	10,508
1983	10,073	714	4	711	10,784	50	10,734
1984	10,760	763	10	753	11,513	144	11,369
1985	11,180	793	18	775	11,955	250	11,705
1986	11,671	827	22	806	12,476	307	12,169
1987	12,367	877	32	845	13,213	447	12,766
1988	13,237	939	37	901	14,139	524	13,614
1989	13,929	988	36	952	14,881	502	14,379
1990	14,798	1,049	33	1,016	15,814	466	15,348
1991	14,642	1,038	33	1,005	15,647	470	15,176
1992	15,540	1,102	32	1,070	16,610	446	16,164
1993	15,451	1,095	29	1,066	16,517	415	16,102
1994	15,791	1,120	29	1,090	16,881	410	16,471
1995	15,923	1,129	28	1,101	17,024	400	16,624
1996	16,432	1,165	27	1,138	17,569	386	17,183
1997	17,134	1,215	28	1,187	18,321	394	17,927
1998	16,381	1,161	28	1,133	17,514	402	17,112
1999	16,627	1,179	29	1,150	17,777	410	17,368
2000	16,872	1,196	30	1,167	18,039	418	17,621
2001	17,125	1,214	30	1,184	18,309	426	17,883
2002	17,564	1,245	31	1,214	18,778	435	18,344
2003	17,861	1,266	31	1,236	19,097	435	18,662
2004	18,126	1,285	31	1,254	19,380	435	18,945
2005	18,393	1,304	31	1,273	19,666	435	19,231
2006	18,637	1,321	31	1,291	19,927	435	19,493
2007	18,954	1,344	31	1,313	20,267	435	19,832
Average Annual Growth Rates							
1980-90	5.21%	5.21%	-	4.73%	5.18%	-	4.73%
1990-97	2.26%	2.26%	-	2.40%	2.26%	-	2.40%
1997-07	1.06%	1.06%	-	1.06%	1.06%	-	1.06%

*Historical data through 1997

TABLE A13
STAFF'S OUTLOOK FOR BURBANK, GLENDALE & PASADENA
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agriculture	Electric Vehicles	Total
1980	616	1,066	45	40	579	4	12	12	-	2,374
1981	641	1,128	46	39	573	5	12	9	-	2,452
1982	647	1,131	50	37	509	5	11	9	-	2,399
1983	681	1,116	61	35	494	4	20	21	-	2,433
1984	730	1,223	66	32	538	4	18	32	-	2,644
1985	715	1,281	71	30	543	5	21	32	-	2,699
1986	714	1,281	73	29	541	5	22	30	-	2,695
1987	735	1,292	81	29	556	5	23	34	-	2,754
1988	783	1,354	78	22	554	5	28	36	-	2,861
1989	785	1,341	74	23	517	6	32	37	-	2,813
1990	858	1,435	77	23	482	5	39	33	-	2,951
1991	797	1,415	75	23	379	5	36	29	-	2,759
1992	842	1,558	80	22	359	4	38	28	-	2,931
1993	825	1,685	83	25	307	4	38	28	-	2,996
1994	839	1,694	88	22	279	4	41	30	-	2,999
1995	862	1,789	91	25	237	4	43	33	-	3,084
1996	874	1,869	95	26	218	4	46	29	-	3,162
1997	882	1,907	98	26	219	4	40	28	-	3,205
1998	880	1,923	85	20	228	5	48	31	-	3,219
1999	882	1,958	86	20	232	5	48	31	-	3,261
2000	884	1,993	87	20	235	5	49	31	-	3,303
2001	889	2,020	88	21	239	5	50	31	-	3,342
2002	894	2,172	88	21	245	5	50	31	-	3,506
2003	900	2,177	89	21	254	5	50	31	9	3,535
2004	906	2,180	90	21	265	5	52	31	18	3,567
2005	913	2,182	91	21	275	6	53	31	26	3,598
2006	920	2,184	92	21	283	6	54	31	33	3,623
2007	927	2,195	93	21	290	6	55	31	40	3,658
Average Annual Growth Rates										
1980-90	3.94%	3.46%	6.82%	-4.25%	-1.67%	0.88%	21.83%	17.29%	na	2.43%
1990-97	0.40%	4.70%	3.99%	1.83%	-7.80%	-3.73%	0.68%	-2.10%	na	1.23%
1997-07	0.50%	1.51%	-0.48%	-1.80%	3.24%	6.27%	3.58%	0.81%	na	1.41%

*Historical data through 1997

TABLE A14
STAFF'S OUTLOOK FOR BURBANK, GLENDALE & PASADENA
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Loss Factor 6.4%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Lossess			
1980	2,374	152	-	152	2,526	-	2,526
1981	2,452	157	-	157	2,609	-	2,609
1982	2,399	154	-	154	2,552	-	2,552
1983	2,433	156	-	156	2,588	-	2,588
1984	2,644	169	-	169	2,813	-	2,813
1985	2,699	173	-	173	2,872	-	2,872
1986	2,695	172	-	172	2,868	-	2,868
1987	2,754	176	-	176	2,930	-	2,930
1988	2,861	183	-	183	3,044	-	3,044
1989	2,813	180	-	180	2,993	-	2,993
1990	2,951	189	-	189	3,140	-	3,140
1991	2,759	177	-	177	2,936	-	2,936
1992	2,931	188	-	188	3,118	-	3,118
1993	2,996	192	-	192	3,188	-	3,188
1994	2,999	192	-	192	3,190	-	3,190
1995	3,084	197	-	197	3,282	-	3,282
1996	3,162	202	-	202	3,365	-	3,365
1997	3,205	205	-	205	3,410	-	3,410
1998	3,219	206	-	206	3,425	-	3,425
1999	3,261	209	-	209	3,469	-	3,469
2000	3,303	211	-	211	3,515	-	3,515
2001	3,342	214	-	214	3,555	-	3,555
2002	3,506	224	-	224	3,730	-	3,730
2003	3,535	226	-	226	3,761	-	3,761
2004	3,567	228	-	228	3,796	-	3,796
2005	3,598	230	-	230	3,828	-	3,828
2006	3,623	232	-	232	3,855	-	3,855
2007	3,658	234	-	234	3,892	-	3,892
Average Annual Growth Rates							
1980-90	2.43%	2.43%	-	2.43%	2.43%	-	2.43%
1990-97	1.23%	1.23%	-	1.23%	1.23%	-	1.23%
1997-07	1.41%	1.41%	-	1.41%	1.41%	-	1.41%

*Historical data through 1997

TABLE A15
STAFF'S OUTLOOK FOR THE OTHER ELECTRIC PLANNING AREA
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agriculture	Electric Vehicles	Total
1980	1,253	785	110	3	109	129	14	273	-	2,677
1981	1,282	836	126	4	106	118	14	297	-	2,781
1982	1,253	831	119	11	62	99	15	270	-	2,660
1983	1,221	794	125	10	47	101	21	276	-	2,595
1984	1,257	820	132	10	53	128	26	296	-	2,722
1985	1,235	843	151	9	52	121	26	333	-	2,770
1986	1,218	869	163	6	64	112	38	289	-	2,758
1987	1,272	898	205	6	61	97	28	307	-	2,872
1988	1,349	943	232	6	57	118	32	318	-	3,055
1989	1,418	968	293	5	71	108	34	305	-	3,205
1990	1,414	979	327	7	64	95	40	383	-	3,310
1991	1,443	1,005	343	7	64	87	42	332	-	3,323
1992	1,526	1,089	339	10	64	75	68	342	-	3,513
1993	1,545	1,131	377	10	63	84	75	317	-	3,602
1994	1,618	1,204	398	10	69	81	59	320	-	3,758
1995	1,606	1,224	421	6	75	77	61	349	-	3,819
1996	1,728	1,198	383	10	88	80	61	362	-	3,910
1997	1,674	1,228	375	10	91	79	60	363	-	3,881
1998	1,681	1,271	374	10	93	82	65	366	-	3,942
1999	1,712	1,296	377	10	95	82	66	372	-	4,011
2000	1,744	1,320	381	11	98	82	67	379	-	4,081
2001	1,771	1,339	385	11	101	82	68	385	-	4,142
2002	1,799	1,356	390	11	103	82	68	392	-	4,201
2003	1,827	1,378	393	11	109	83	69	399	-	4,268
2004	1,855	1,397	395	11	116	85	70	405	-	4,334
2005	1,883	1,437	399	11	121	86	71	411	-	4,420
2006	1,911	1,457	403	12	126	86	73	417	-	4,484
2007	1,939	1,480	404	12	129	87	74	422	-	4,546
Average Annual Growth Rates										
1980-90	1.29%	2.47%	19.60%	10.45%	-4.14%	-2.64%	18.13%	4.05%	na	2.36%
1990-97	2.63%	3.64%	2.12%	6.80%	5.99%	-2.40%	6.96%	-0.77%	na	2.46%
1997-07	1.58%	2.05%	0.77%	1.73%	4.19%	0.96%	2.30%	1.64%	na	1.71%

*Historical data through 1997

TABLE A16
STAFF'S OUTLOOK FOR THE OTHER ELECTRIC PLANNING AREA
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Loss Factor 12.8%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Losses			
1980	2,677	343	-	343	3,020	-	3,020
1981	2,781	356	-	356	3,137	-	3,137
1982	2,660	341	-	341	3,001	-	3,001
1983	2,595	332	-	332	2,928	-	2,928
1984	2,722	348	-	348	3,071	-	3,071
1985	2,770	355	-	355	3,124	-	3,124
1986	2,758	353	-	353	3,111	-	3,111
1987	2,872	368	-	368	3,240	-	3,240
1988	3,055	391	-	391	3,446	-	3,446
1989	3,205	410	-	410	3,615	-	3,615
1990	3,310	424	-	424	3,733	-	3,733
1991	3,323	425	-	425	3,748	-	3,748
1992	3,513	450	-	450	3,963	-	3,963
1993	3,602	461	-	461	4,063	-	4,063
1994	3,758	481	-	481	4,239	-	4,239
1995	3,819	489	-	489	4,308	-	4,308
1996	3,910	500	-	500	4,410	-	4,410
1997	3,881	497	-	497	4,378	-	4,378
1998	3,942	505	-	505	4,447	-	4,447
1999	4,011	513	-	513	4,525	-	4,525
2000	4,081	522	-	522	4,604	-	4,604
2001	4,142	530	-	530	4,673	-	4,673
2002	4,201	538	-	538	4,739	-	4,739
2003	4,268	546	-	546	4,815	-	4,815
2004	4,334	555	-	555	4,888	-	4,888
2005	4,420	566	-	566	4,985	-	4,985
2006	4,484	574	-	574	5,058	-	5,058
2007	4,546	582	-	582	5,128	-	5,128
Average Annual Growth Rates							
1980-90	2.36%	2.36%	-	2.36%	2.36%	-	2.36%
1990-97	2.46%	2.46%	-	2.46%	2.46%	-	2.46%
1997-07	1.71%	1.71%	-	1.71%	1.71%	-	1.71%

*Historical data through 1997

TABLE A17
STAFF'S OUTLOOK FOR THE DEPARTMENT OF WATER RESOURCES
ELECTRICITY CONSUMPTION BY SECTOR (GWh)*

Year	Residential	Commercial	TCU	Street Lighting	Assembly	Process	Mining	Agriculture	Electric Vehicles	Total
1980	-	-	-	-	-	-	-	3,354	-	3,354
1981	-	-	-	-	-	-	-	5,264	-	5,264
1982	-	-	-	-	-	-	-	5,192	-	5,192
1983	-	-	-	-	-	-	-	2,497	-	2,497
1984	-	-	-	-	-	-	-	3,349	-	3,349
1985	-	-	-	-	-	-	-	5,410	-	5,410
1986	-	-	-	-	-	-	-	5,031	-	5,031
1987	-	-	-	-	-	-	-	4,734	-	4,734
1988	-	-	-	-	-	-	-	5,928	-	5,928
1989	-	-	-	-	-	-	-	7,413	-	7,413
1990	-	-	-	-	-	-	-	8,171	-	8,171
1991	-	-	-	-	-	-	-	4,400	-	4,400
1992	-	-	-	-	-	-	-	4,088	-	4,088
1993	-	-	-	-	-	-	-	4,372	-	4,372
1994	-	-	-	-	-	-	-	4,946	-	4,946
1995	-	-	-	-	-	-	-	3,562	-	3,562
1996	-	-	-	-	-	-	-	5,146	-	5,146
1997	-	-	-	-	-	-	-	5,504	-	5,504
1998	-	-	-	-	-	-	-	9,237	-	9,237
1999	-	-	-	-	-	-	-	9,237	-	9,237
2000	-	-	-	-	-	-	-	9,237	-	9,237
2001	-	-	-	-	-	-	-	9,237	-	9,237
2002	-	-	-	-	-	-	-	9,237	-	9,237
2003	-	-	-	-	-	-	-	9,237	-	9,237
2004	-	-	-	-	-	-	-	9,237	-	9,237
2005	-	-	-	-	-	-	-	9,237	-	9,237
2006	-	-	-	-	-	-	-	9,237	-	9,237
2007	-	-	-	-	-	-	-	9,237	-	9,237
Average Annual Growth Rates										
1980-90	na	na	na	na	na	na	na	14.36%	na	14.36%
1990-97	na	na	na	na	na	na	na	-4.66%	na	-4.66%
1997-07	na	na	na	na	na	na	na	6.78%	na	6.78%

*Historical data through 1997

TABLE A18
STAFF'S OUTLOOK FOR THE DEPARTMENT OF WATER RESOURCES
NET ELECTRICITY FOR GENERATION LOAD (GWh)*

Year	Total Consumption	Loss Factor 3.8%			Gross Generation	Private Supply	Region's Energy Requirements
		Gross Losses	Self Gen. Credit	Net Losses			
1980	3,354	127	-	127	3,481	-	3,481
1981	5,264	200	-	200	5,464	-	5,464
1982	5,192	197	-	197	5,389	-	5,389
1983	2,497	95	-	95	2,592	-	2,592
1984	3,349	127	-	127	3,476	-	3,476
1985	5,410	206	-	206	5,616	-	5,616
1986	5,031	191	-	191	5,222	-	5,222
1987	4,734	180	-	180	4,913	-	4,913
1988	5,928	225	-	225	6,154	-	6,154
1989	7,413	282	-	282	7,694	-	7,694
1990	8,171	311	-	311	8,482	-	8,482
1991	4,400	167	-	167	4,567	-	4,567
1992	4,088	155	-	155	4,243	-	4,243
1993	4,372	166	-	166	4,538	-	4,538
1994	4,946	188	-	188	5,133	-	5,133
1995	3,562	135	-	135	3,698	-	3,698
1996	5,146	196	-	196	5,342	-	5,342
1997	5,504	209	-	209	5,713	-	5,713
1998	9,237	351	-	351	9,588	-	9,588
1999	9,237	351	-	351	9,588	-	9,588
2000	9,237	351	-	351	9,588	-	9,588
2001	9,237	351	-	351	9,588	-	9,588
2002	9,237	351	-	351	9,588	-	9,588
2003	9,237	351	-	351	9,588	-	9,588
2004	9,237	351	-	351	9,588	-	9,588
2005	9,237	351	-	351	9,588	-	9,588
2006	9,237	351	-	351	9,588	-	9,588
2007	9,237	351	-	351	9,588	-	9,588
Average Annual Growth Rates							
1980-90	14.36%	14.36%	-	14.36%	14.36%	-	14.36%
1990-97	-4.66%	-4.66%	-	-4.66%	-4.66%	-	-4.66%
1997-07	6.78%	6.78%	-	6.78%	6.78%	-	6.78%

*Historical data through 1997

TABLE A19
STAFFS OUTLOOK FOR CALIFORNIA'S COUNTIES
ELECTRICITY CONSUMPTION (GWh)

	Historical Consumption Data									Growth Rates		
COUNTY	1990	1991	1992	1993	1994	1995	1996	1997		1990-93	1993-97	1990-97
ALAMEDA	10,080	9,833	9,856	10,483	10,307	10,451	11,071	11,896		1.33%	3.37%	2.57%
ALPINE	10	10	10	11	11	11	11	11		5.22%	-1.52%	1.23%
AMADOR	256	263	262	271	270	287	257	258		1.89%	-1.16%	0.11%
BUTTE	1,187	1,178	1,205	1,174	1,232	1,228	1,281	1,292		-0.38%	2.51%	1.26%
CALAVERAS	249	257	255	253	239	220	229	230		0.55%	-2.24%	-1.06%
COLUSA	215	218	221	215	235	222	236	240		-0.07%	2.97%	1.66%
CONTRA COSTA	7,058	7,039	7,001	6,636	6,702	6,813	6,273	6,429		-1.99%	-0.78%	-1.27%
DEL NORTE	198	211	205	215	212	212	218	220		2.86%	0.64%	1.62%
EL DORADO	898	908	933	953	949	988	1,027	1,035		2.01%	2.17%	2.18%
FRESNO	5,193	5,401	5,611	5,314	5,645	5,461	5,694	5,753		0.77%	2.06%	1.54%
GLENN	341	336	337	338	348	405	391	404		-0.22%	4.88%	2.68%
HUMBOLDT	750	788	775	783	795	815	826	835		1.44%	1.68%	1.62%
IMPERIAL	721	604	658	692	737	798	903	953		-1.31%	9.39%	4.60%
INYO	85	79	75	78	80	82	87	88		-2.88%	3.46%	0.57%
KERN	12,719	9,831	10,065	9,515	10,763	9,178	10,536	10,751		-8.40%	3.25%	-2.21%
KINGS	1,063	1,086	1,028	961	1,135	984	1,028	1,018		-3.20%	1.48%	-0.61%
LAKE	465	490	487	480	501	506	433	437		1.08%	-2.21%	-0.84%
LASSEN	180	191	200	198	203	195	198	196		3.20%	-0.17%	1.27%
LOS ANGELES	64,533	63,245	64,088	63,556	62,629	63,337	64,824	67,298		-0.50%	1.47%	0.61%
MADERA	997	994	1,048	1,024	1,072	1,045	1,111	1,138		0.90%	2.79%	2.02%
MARIN	1,279	1,272	1,295	1,322	1,304	1,335	1,361	1,479		1.13%	2.97%	2.24%
MARIPOSA	106	114	111	107	114	116	119	118		0.38%	2.51%	1.61%
MENDOCINO	609	589	595	615	604	608	642	652		0.32%	1.49%	1.00%
MERCED	2,697	1,950	2,000	2,592	2,486	2,447	2,605	2,680		-1.29%	0.84%	-0.09%
MODOC	134	128	162	154	148	137	167	181		5.12%	4.22%	4.97%
MONO	158	166	163	172	170	167	168	166		2.97%	-0.96%	0.67%
MONTEREY	2,217	2,233	2,264	2,278	2,182	2,356	2,339	2,331		0.93%	0.58%	0.74%
NAPA	659	675	716	720	715	749	854	863		3.04%	4.98%	4.41%
NEVADA	488	505	504	510	521	520	542	545		1.57%	1.71%	1.70%
ORANGE	17,168	17,088	17,788	17,541	17,631	17,942	18,505	19,110		0.72%	2.24%	1.62%
PLACER	1,468	1,575	1,658	1,703	1,772	1,839	1,983	1,998		5.33%	4.34%	5.16%
PLUMAS	148	154	150	153	145	143	145	145		1.25%	-1.30%	-0.24%
RIVERSIDE	8,230	8,156	8,565	8,651	8,913	9,280	9,776	9,814		1.71%	3.36%	2.75%
SACRAMENTO	8,422	8,377	8,602	8,603	8,664	8,581	8,952	9,120		0.72%	1.50%	1.18%
SAN BENITO	208	206	206	211	220	228	242	245		0.52%	3.99%	2.53%
SAN BERNARDINO	9,588	9,490	9,821	9,896	10,150	10,484	10,862	10,959		1.07%	2.69%	2.04%
SAN DIEGO	14,338	13,637	14,559	14,447	14,587	14,830	15,337	15,693		0.25%	2.16%	1.35%
SAN FRANCISCO	5,016	5,030	5,029	5,068	4,947	5,136	5,133	5,817		0.34%	3.69%	2.28%
SAN JOAQUIN	4,083	3,905	3,919	4,451	4,639	4,612	4,789	4,841		3.00%	2.19%	2.65%
SAN LUIS OBISPO	1,143	1,144	1,151	1,169	1,176	1,218	1,256	1,252		0.75%	1.77%	1.36%
SAN MATEO	4,060	4,003	4,086	4,107	4,103	4,277	4,373	4,736		0.39%	3.82%	2.38%
SANTA BARBARA	2,504	2,532	2,539	2,627	2,593	2,705	2,774	2,824		1.64%	1.87%	1.83%
SANTA CLARA	14,833	14,738	15,039	15,436	15,670	15,560	16,220	16,445		1.36%	1.63%	1.55%
SANTA CRUZ	1,365	1,387	1,383	1,425	1,396	1,464	1,468	1,589		1.46%	2.88%	2.35%
SHASTA	1,474	1,511	1,555	1,494	1,469	1,525	1,538	1,564		0.46%	1.18%	0.88%
SIERRA	25	25	24	26	24	24	24	25		1.72%	-1.41%	-0.11%
SISKIYOU	446	456	447	441	472	457	443	457		-0.33%	0.93%	0.38%
SOLANO	2,843	2,639	2,484	2,689	2,916	2,797	2,864	2,891		-1.80%	1.88%	0.24%
SONOMA	2,262	2,269	2,317	2,384	2,389	2,452	2,556	2,561		1.80%	1.86%	1.89%
STANISLAUS	2,926	3,479	3,639	3,525	3,623	3,595	3,884	3,949		6.82%	3.01%	4.99%
SUTTER	445	455	482	486	481	492	515	519		3.04%	1.73%	2.38%
TEHAMA	448	441	464	458	476	478	495	505		0.77%	2.57%	1.83%
TRINITY	71	72	71	74	79	81	81	81		1.49%	2.47%	2.11%
TULARE	2,651	2,594	2,657	2,518	2,546	2,549	2,731	2,641		-1.67%	1.22%	-0.05%
TUOLUMNE	392	397	400	411	397	363	369	369		1.64%	-2.55%	-0.83%
VENTURA	4,311	4,254	4,263	4,342	4,406	4,481	4,619	4,783		0.23%	2.54%	1.56%
YOLO	1,168	1,169	1,199	1,220	1,334	1,264	1,328	1,324		1.49%	2.14%	1.91%
YUBA	459	482	362	447	570	457	474	465		-0.91%	1.04%	0.19%
Total	228,038	222,260	226,988	227,624	230,097	230,990	239,168	246,224		-0.06%	2.04%	1.14%

TABLE A19 (continued)
STAFFS OUTLOOK FOR CALIFORNIA'S COUNTIES
ELECTRICITY CONSUMPTION (GWh)

	Consumption Forecast										Growth Rates	
COUNTY	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007		1997-07
ALAMEDA	11,825	11,982	12,129	12,285	12,435	12,666	12,847	13,234	13,384	13,557		1.40%
ALPINE	11	11	11	11	11	11	11	12	12	12		1.07%
AMADOR	257	261	266	270	274	279	284	292	296	301		1.64%
BUTTE	1,281	1,300	1,319	1,338	1,356	1,380	1,399	1,436	1,454	1,474		1.41%
CALAVERAS	228	232	236	239	242	246	249	254	257	261		1.33%
COLUSA	243	247	251	255	260	265	270	278	282	286		1.91%
CONTRA COSTA	6,406	6,504	6,598	6,695	6,790	6,925	7,039	7,249	7,348	7,454		1.59%
DEL NORTE	220	221	222	224	225	227	228	232	233	234		0.61%
EL DORADO	1,026	1,040	1,054	1,068	1,081	1,097	1,110	1,136	1,148	1,161		1.21%
FRESNO	5,753	5,845	5,935	6,025	6,110	6,227	6,321	6,500	6,583	6,676		1.60%
GLENN	406	414	420	427	435	446	458	471	481	490		2.11%
HUMBOLDT	835	850	865	880	895	915	932	961	976	992		1.87%
IMPERIAL	975	994	1,013	1,029	1,044	1,061	1,079	1,100	1,119	1,135		1.91%
INYO	89	91	92	93	96	98	100	101	102	104		1.78%
KERN	14,188	14,320	14,438	14,556	14,698	14,869	15,030	15,237	15,371	15,502		4.42%
KINGS	1,031	1,049	1,064	1,080	1,098	1,118	1,135	1,160	1,175	1,190		1.69%
LAKE	434	442	450	457	464	472	480	492	499	506		1.58%
LASSEN	197	199	200	202	203	205	206	210	211	212		0.81%
LOS ANGELES	68,178	69,310	70,196	71,127	73,246	74,619	75,927	77,208	78,250	79,412		1.80%
MADERA	1,150	1,170	1,190	1,209	1,228	1,254	1,279	1,312	1,332	1,352		1.88%
MARIN	1,460	1,476	1,493	1,510	1,522	1,545	1,558	1,601	1,612	1,628		1.00%
MARIPOSA	117	119	121	123	125	127	129	133	134	136		1.47%
MENDOCINO	648	661	672	683	695	710	724	745	757	770		1.81%
MERCED	2,724	2,768	2,811	2,849	2,886	2,934	2,978	3,032	3,067	3,098		1.56%
MODOC	182	183	185	187	188	191	193	196	198	199		1.05%
MONO	167	171	174	177	182	186	189	192	194	197		1.91%
MONTEREY	2,352	2,393	2,434	2,474	2,511	2,562	2,602	2,681	2,715	2,752		1.80%
NAPA	857	872	886	900	915	936	955	985	1,001	1,019		1.80%
NEVADA	539	547	555	563	570	578	584	598	604	611		1.20%
ORANGE	19,004	19,368	19,612	19,862	20,380	20,822	21,182	21,524	21,800	22,128		1.58%
PLACER	1,990	2,024	2,054	2,086	2,118	2,160	2,197	2,257	2,290	2,326		1.64%
PLUMAS	144	146	149	151	153	155	157	161	162	164		1.30%
RIVERSIDE	9,904	10,186	10,416	10,635	10,970	11,256	11,501	11,746	11,970	12,217		2.45%
SACRAMENTO	9,153	9,318	9,490	9,664	10,002	10,153	10,309	10,465	10,612	10,788		1.83%
SAN BENITO	245	249	253	257	261	267	272	280	284	288		1.78%
SAN BERNARDINO	11,096	11,384	11,614	11,845	12,206	12,543	12,853	13,156	13,415	13,688		2.49%
SAN DIEGO	14,993	15,218	15,441	15,673	16,077	16,354	16,602	16,852	17,079	17,373		1.07%
SAN FRANCISCO	5,763	5,835	5,910	5,987	6,038	6,139	6,185	6,410	6,444	6,507		1.19%
SAN JOAQUIN	4,906	5,001	5,092	5,177	5,261	5,370	5,466	5,611	5,691	5,773		1.93%
SAN LUIS OBISPO	1,248	1,269	1,289	1,310	1,328	1,353	1,373	1,413	1,430	1,449		1.58%
SAN MATEO	4,715	4,775	4,833	4,893	4,944	5,029	5,087	5,239	5,287	5,347		1.29%
SANTA BARBARA	2,848	2,899	2,940	2,983	3,044	3,107	3,161	3,234	3,278	3,324		1.77%
SANTA CLARA	16,396	16,699	16,971	17,265	17,586	18,033	18,438	19,099	19,446	19,803		2.04%
SANTA CRUZ	1,574	1,596	1,616	1,637	1,658	1,688	1,714	1,763	1,784	1,807		1.37%
SHASTA	1,550	1,574	1,597	1,620	1,646	1,679	1,709	1,757	1,784	1,813		1.59%
SIERRA	24	25	25	25	25	26	26	26	27	27		0.91%
SISKIYOU	459	460	462	466	469	474	478	485	488	491		0.73%
SOLANO	2,900	2,949	2,994	3,042	3,096	3,166	3,232	3,328	3,386	3,444		1.91%
SONOMA	2,546	2,588	2,629	2,671	2,712	2,766	2,811	2,894	2,935	2,978		1.63%
STANISLAUS	3,966	4,032	4,096	4,158	4,221	4,305	4,380	4,494	4,559	4,625		1.71%
SUTTER	518	526	533	541	548	558	565	580	587	595		1.46%
TEHAMA	503	511	519	527	535	546	557	572	581	591		1.69%
TRINITY	80	82	83	85	86	87	88	90	91	92		1.38%
TULARE	2,658	2,708	2,748	2,786	2,843	2,895	2,942	2,991	3,030	3,070		1.62%
TUOLUMNE	365	372	379	385	390	398	403	414	419	425		1.51%
VENTURA	4,796	4,881	4,942	5,003	5,119	5,217	5,300	5,379	5,443	5,514		1.53%
YOLO	1,326	1,351	1,375	1,399	1,421	1,450	1,472	1,518	1,537	1,560		1.78%
YUBA	474	481	488	495	501	509	517	528	535	542		1.64%
Total	249,926	254,181	257,832	261,563	267,425	272,654	277,269	283,304	287,172	291,473		1.84%

APPENDIX B: PEAK ELECTRICITY DEMAND DATA

This appendix provides estimates of peak demand by sector for the entire State of California and by major service/planning area. The appendix also includes estimates of peak system losses and private supply. Because of the dynamics of the restructured marketplace, it is difficult to predict the cost effectiveness of self-generation over the next ten years. It may, however, be reasonable to assume that since customers face the same rate structures through 2002 as they do today, and only a small portion of their entire electricity service is opened to competition, self-generation that was economically in the past will probably be economical through 2002. Staff therefore assumed the level of self-generation used to derive the adopted forecasts in *1996 Electricity Report (ER 96)* are still applicable. For PG&E, SGD&E, and LADWP the *ER 96* historic values were updated through 1996. SCE did not provide updated values. SMUD, BGP, OTHER, and DWR do not report self-generation estimates.

Losses were estimated using loss factors from the *ER 96* adopted forecasts. The applicability of these loss factors in the restructured marketplace is somewhat unknown. The three Utility Distribution Companies (i.e., PG&E, Edison, and SDG&E) have been posting hourly distribution loss factor since April 1, 1998. These loss factors along with transmission losses reported by the Independent System Operator (ISO) should provide information needed to verify the appropriateness of Staff's assumed loss factors.

TABLE B1
STAFF'S STATEWIDE OUTLOOK
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base*	Weather*	Total
1980	6,615	6,082	6,477	3,496	1,708	3,727	629	2,326	1,237	0	22,975	9,917	32,892
1981	6,789	6,429	6,663	3,849	1,640	3,752	726	2,683	1,303	0	23,872	10,581	34,453
1982	6,235	5,096	6,843	4,286	1,522	3,609	766	2,181	1,257	0	22,721	9,665	32,386
1983	6,608	6,269	6,844	4,382	1,511	3,593	791	1,840	1,284	0	22,752	10,947	33,699
1984	6,396	6,417	7,737	5,614	1,605	4,105	919	2,622	1,428	0	25,092	12,354	37,446
1985	7,693	6,364	7,609	4,193	1,622	3,936	956	2,712	1,470	0	26,328	10,843	37,170
1986	7,910	5,884	8,001	3,698	1,649	4,049	850	2,569	1,394	0	26,752	9,867	36,619
1987	7,885	5,696	8,378	4,300	1,753	4,187	842	2,358	1,540	0	27,274	10,303	37,577
1988	8,326	6,639	8,958	5,210	1,908	4,498	866	2,917	1,646	0	29,395	12,251	41,647
1989	7,866	6,250	9,295	4,473	1,792	4,384	877	3,043	1,674	0	29,307	11,060	40,367
1990	8,076	6,178	10,466	6,242	1,979	4,919	926	3,370	1,896	0	31,996	12,791	44,787
1991	7,913	5,706	10,257	5,866	1,878	4,613	892	2,455	1,863	0	30,237	11,944	42,181
1992	7,640	5,895	10,926	6,983	1,858	4,779	863	2,206	2,001	0	30,697	13,235	43,931
1993	7,648	7,207	10,222	5,592	1,813	4,293	789	2,435	1,921	0	29,537	13,185	42,721
1994	9,359	7,136	10,698	5,233	1,996	4,495	860	2,775	1,944	0	32,617	12,715	45,332
1995	9,200	7,545	10,828	5,047	1,927	4,621	867	2,364	1,943	0	32,102	13,089	45,191
1996	8,363	7,608	11,386	7,452	1,924	4,803	859	2,493	1,976	0	32,175	15,558	47,733
1997	8,334	7,137	11,326	6,633	1,904	4,865	831	2,585	2,029	0	32,231	14,275	46,505
1998	8,417	7,205	11,493	6,686	1,927	4,968	838	2,628	2,046	0	32,681	14,402	47,083
1999	8,516	7,291	11,775	6,820	1,952	5,083	841	2,672	2,069	0	33,278	14,631	47,909
2000	8,619	7,381	11,996	6,913	1,967	5,186	838	2,717	2,091	0	33,793	14,822	48,615
2001	8,717	7,473	12,220	7,004	1,987	5,299	837	2,751	2,116	0	34,313	15,012	49,325
2002	8,820	7,567	12,668	7,230	2,028	5,459	836	2,776	2,141	0	35,122	15,338	50,459
2003	8,928	7,663	12,901	7,320	2,090	5,671	835	2,813	2,164	31	35,832	15,531	51,363
2004	9,038	7,764	12,989	7,344	2,166	5,919	834	2,846	2,192	63	36,453	15,664	52,117
2005	9,154	7,873	13,294	7,437	2,242	6,153	836	2,868	2,220	93	37,274	15,878	53,152
2006	9,273	7,987	13,359	7,451	2,296	6,345	840	2,892	2,244	119	37,789	16,014	53,803
2007	9,396	8,103	13,526	7,515	2,340	6,522	843	2,904	2,263	142	38,363	16,203	54,566
Average Annual Growth Rates													
1980-90	2.21%	0.16%	6.16%	7.85%	1.58%	3.20%	4.72%	4.49%	5.32%	na	3.93%	2.90%	3.62%
1990-97	0.46%	2.22%	1.17%	0.89%	-0.55%	-0.16%	-1.46%	-3.33%	1.00%	na	0.10%	1.66%	0.55%
1997-07	1.27%	1.35%	1.94%	1.33%	2.29%	3.41%	0.14%	1.23%	1.15%	na	1.90%	1.35%	1.73%
*Totals do not sum because Staff does not produce sector peak demand for the Department of Water Resources or the OTHER Planning Area.													

*Data calibrated to history through 1996

TABLE B2
STAFF'S STATEWIDE OUTLOOK
COINCIDENT PEAK DEMAND FOR LOAD

Year	Total End Use Load	Average Loss Factor 8.1%			Gross Generation	Private Supply	Region's System Peak	Load Factor
		Gross Losses	Self Gen. Credit	Net Losses				
1980	32,892	2,746	6	2,740	35,632	74	35,558	57.95%
1981	34,453	2,848	7	2,841	37,295	75	37,219	57.54%
1982	32,386	2,666	9	2,657	35,043	107	34,935	59.74%
1983	33,699	2,839	26	2,813	36,512	286	36,227	58.53%
1984	37,446	2,928	32	2,895	40,341	356	39,985	56.57%
1985	37,170	2,921	39	2,882	40,052	437	39,615	59.13%
1986	36,619	2,866	45	2,821	39,440	496	38,943	60.21%
1987	37,577	3,019	56	2,963	40,540	622	39,918	61.63%
1988	41,647	3,316	80	3,236	44,883	882	44,000	58.39%
1989	40,367	3,149	90	3,059	43,426	1,012	42,413	62.15%
1990	44,787	3,372	95	3,278	48,065	1,061	47,004	58.12%
1991	42,181	3,405	101	3,305	45,486	1,117	44,369	60.15%
1992	43,931	3,539	99	3,439	47,371	1,099	46,272	58.98%
1993	42,721	3,467	101	3,366	46,087	1,120	44,966	60.82%
1994	45,332	3,729	140	3,588	48,920	1,523	47,397	57.94%
1995	45,191	3,719	143	3,576	48,767	1,548	47,219	58.35%
1996	47,733	3,933	146	3,786	51,519	1,587	49,932	57.20%
1997	46,505	3,828	150	3,678	50,183	1,629	48,555	60.44%
1998	47,083	4,064	152	3,912	50,995	1,650	49,345	60.60%
1999	47,909	4,134	154	3,980	51,890	1,669	50,221	60.56%
2000	48,615	4,195	155	4,039	52,655	1,686	50,969	60.54%
2001	49,325	4,256	156	4,099	53,424	1,696	51,728	60.54%
2002	50,459	4,352	157	4,195	54,655	1,703	52,952	60.50%
2003	51,363	4,429	157	4,272	55,636	1,703	53,933	60.60%
2004	52,117	4,494	157	4,337	56,453	1,703	54,751	60.73%
2005	53,152	4,584	157	4,427	57,579	1,703	55,876	60.85%
2006	53,803	4,640	157	4,483	58,287	1,703	56,584	60.93%
2007	54,566	4,706	157	4,549	59,114	1,703	57,412	60.98%
Average Annual Growth Rates								
1980-90	3.62%	2.28%	-	1.96%	3.49%	-	3.22%	
1990-97	0.55%	1.93%	-	1.75%	0.63%	-	0.47%	
1997-07	1.73%	2.29%	-	2.37%	1.78%	-	1.82%	

TABLE B3
STAFF'S OUTLOOK FOR THE PG&E ELECTRIC PLANNING AREA
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base	Weather	Total
1980	2,814	2,030	2,653	1,189	1,020	1,421	238	1,282	514	0	9,943	3,219	13,162
1981	2,836	2,273	2,634	1,037	943	1,432	302	1,372	539	0	10,059	3,310	13,369
1982	2,689	1,639	2,499	1,103	816	1,286	330	1,019	514	0	9,153	2,742	11,895
1983	2,845	2,217	2,658	1,202	854	1,337	366	932	519	0	9,511	3,419	12,929
1984	2,665	2,129	2,999	1,463	906	1,505	417	1,336	623	0	10,452	3,592	14,044
1985	3,088	2,279	2,829	1,343	897	1,431	446	1,265	636	0	10,591	3,622	14,214
1986	3,073	2,017	3,001	982	925	1,498	376	970	546	0	10,388	2,999	13,387
1987	3,153	1,939	3,246	1,285	960	1,551	385	1,063	627	0	10,984	3,224	14,208
1988	3,445	2,020	3,669	1,730	1,065	1,722	420	1,211	660	0	12,193	3,750	15,943
1989	2,893	2,176	3,810	1,505	966	1,679	408	1,214	649	0	11,619	3,681	15,299
1990	3,574	2,348	3,890	1,801	1,098	1,799	418	1,260	698	0	12,737	4,149	16,885
1991	3,407	2,192	3,806	1,630	1,031	1,693	416	1,075	681	0	12,108	3,821	15,930
1992	2,973	2,224	4,073	1,712	1,014	1,721	408	1,092	700	0	11,982	3,936	15,917
1993	3,093	2,738	4,200	2,060	1,070	1,754	410	1,005	728	0	12,259	4,798	17,057
1994	3,857	2,477	4,296	1,307	1,167	1,820	455	1,147	751	0	13,492	3,784	17,276
1995	3,799	2,610	4,392	1,750	1,108	1,856	427	1,139	729	0	13,451	4,361	17,811
1996	3,836	2,742	4,520	2,473	1,121	1,969	412	1,168	776	0	13,802	5,215	19,017
1997	3,708	2,569	4,464	1,802	1,094	1,980	394	1,143	763	0	13,547	4,372	17,919
1998	3,745	2,585	4,567	1,832	1,107	2,035	398	1,172	768	0	13,791	4,417	18,208
1999	3,789	2,609	4,652	1,855	1,121	2,094	401	1,202	777	0	14,036	4,464	18,499
2000	3,834	2,633	4,740	1,878	1,130	2,148	399	1,234	786	0	14,270	4,512	18,782
2001	3,874	2,657	4,832	1,902	1,141	2,207	399	1,255	796	0	14,503	4,559	19,062
2002	3,915	2,680	4,891	1,916	1,165	2,282	399	1,272	805	0	14,729	4,596	19,325
2003	3,959	2,706	5,000	1,945	1,199	2,375	399	1,296	814	5	15,047	4,650	19,697
2004	4,002	2,733	5,041	1,952	1,241	2,477	397	1,318	824	11	15,313	4,685	19,997
2005	4,049	2,763	5,302	2,028	1,285	2,576	397	1,331	834	16	15,791	4,791	20,582
2006	4,097	2,794	5,332	2,031	1,317	2,664	399	1,346	843	21	16,019	4,825	20,843
2007	4,146	2,827	5,396	2,046	1,342	2,748	400	1,351	850	25	16,259	4,873	21,132
Average Annual Growth Rates													
1980-90	2.70%	1.56%	4.66%	5.14%	0.76%	2.66%	7.52%	-0.17%	3.57%	na	2.81%	2.89%	2.83%
1990-97	0.53%	1.35%	2.11%	0.02%	-0.05%	1.44%	-0.79%	-1.33%	1.33%	na	0.91%	0.77%	0.87%
1997-07	1.18%	1.00%	2.09%	1.35%	2.27%	3.88%	0.15%	1.82%	1.14%	na	2.00%	1.15%	1.79%

*Data calibrated to history through 1996

TABLE B4
STAFF'S OUTLOOK FOR THE PG&E ELECTRIC PLANNING AREA
COINCIDENT PEAK DEMAND FOR LOAD

Year	Total End Use Load	Loss Factor 9.7%			Gross Generation	Private Supply	Region's System Peak	Load Factor
		Gross Losses	Self Gen. Credit	Net Lossess				
1980	13,162	1,187	4	1,183	14,345	39	14,306	57.41%
1981	13,369	1,208	4	1,204	14,573	40	14,533	57.77%
1982	11,895	1,079	5	1,073	12,968	57	12,912	63.38%
1983	12,929	1,188	12	1,176	14,105	125	13,980	60.48%
1984	14,044	1,096	15	1,080	15,124	155	14,969	59.62%
1985	14,214	1,118	18	1,100	15,313	186	15,127	60.73%
1986	13,387	1,056	21	1,035	14,421	215	14,206	63.44%
1987	14,208	1,184	25	1,159	15,367	262	15,105	63.44%
1988	15,943	1,312	36	1,276	17,218	376	16,842	58.81%
1989	15,299	1,170	45	1,125	16,424	463	15,961	63.07%
1990	16,885	1,182	46	1,136	18,021	478	17,543	58.69%
1991	15,930	1,376	47	1,329	17,259	488	16,771	62.30%
1992	15,917	1,376	46	1,331	17,248	473	16,775	63.34%
1993	17,057	1,499	47	1,451	18,508	488	18,020	59.72%
1994	17,276	1,511	73	1,438	18,714	753	17,961	59.19%
1995	17,811	1,558	75	1,484	19,295	769	18,526	58.17%
1996	19,017	1,664	78	1,586	20,603	799	19,804	55.95%
1997	17,919	1,568	80	1,487	19,406	829	18,577	61.48%
1998	18,208	1,766	82	1,685	19,893	841	19,052	60.50%
1999	18,499	1,794	82	1,712	20,211	849	19,362	60.52%
2000	18,782	1,822	83	1,739	20,520	854	19,666	60.52%
2001	19,062	1,849	83	1,766	20,828	858	19,970	60.54%
2002	19,325	1,875	83	1,791	21,116	860	20,256	60.60%
2003	19,697	1,911	83	1,827	21,525	860	20,665	60.68%
2004	19,997	1,940	83	1,856	21,854	860	20,994	60.78%
2005	20,582	1,996	83	1,913	22,495	860	21,635	60.84%
2006	20,843	2,022	83	1,938	22,782	860	21,922	60.91%
2007	21,132	2,050	83	1,966	23,099	860	22,239	60.96%
Average Annual Growth Rates								
1980-90	2.83%	-0.04%	-	-0.40%	2.56%	-	2.26%	
1990-97	0.87%	4.66%	-	4.42%	1.10%	-	0.84%	
1997-07	1.79%	3.08%	-	3.22%	1.90%	-	1.97%	

TABLE B5
STAFF'S OUTLOOK FOR SACRAMENTO MUNICIPAL UTILITY DISTRICT
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base	Weather	Total
1980	256	649	273	175	18	13	9	18	35	0	621	824	1,445
1981	322	569	300	159	24	15	12	28	56	0	756	728	1,484
1982	318	526	298	127	18	12	9	17	40	0	712	653	1,365
1983	320	618	277	156	21	18	12	19	64	0	732	774	1,506
1984	325	672	296	176	18	20	10	17	52	0	738	848	1,586
1985	354	556	388	234	21	38	16	20	70	0	908	790	1,698
1986	330	554	383	211	21	40	17	21	70	0	883	765	1,648
1987	333	573	400	249	23	30	20	21	60	0	888	822	1,710
1988	360	874	296	274	17	29	6	21	60	0	789	1,148	1,937
1989	396	664	406	202	22	54	12	13	62	0	965	866	1,831
1990	351	727	430	288	28	69	18	20	82	0	998	1,015	2,013
1991	401	783	397	218	18	63	13	16	78	0	986	1,001	1,987
1992	360	610	449	272	28	77	14	24	96	0	1,048	881	1,929
1993	357	706	443	240	26	72	14	24	87	0	1,022	946	1,968
1994	429	580	443	197	31	79	14	23	80	0	1,098	777	1,875
1995	383	986	274	210	24	51	6	25	80	0	844	1,195	2,039
1996	334	952	413	295	21	57	13	18	74	0	929	1,247	2,177
1997	379	988	312	242	21	46	6	27	80	0	870	1,230	2,100
1998	384	997	318	245	21	47	6	27	81	0	884	1,242	2,126
1999	390	1,009	325	249	21	49	6	27	81	0	900	1,258	2,158
2000	397	1,024	332	253	22	50	6	28	82	0	917	1,277	2,193
2001	404	1,041	339	256	22	51	6	28	83	0	933	1,297	2,231
2002	412	1,059	361	269	22	52	6	28	84	0	965	1,328	2,293
2003	419	1,078	363	269	22	53	7	29	85	3	981	1,347	2,328
2004	427	1,097	365	270	22	55	7	29	87	6	997	1,367	2,364
2005	435	1,118	367	271	22	57	7	29	88	8	1,013	1,388	2,401
2006	443	1,139	369	271	22	58	7	30	89	11	1,028	1,410	2,439
2007	451	1,160	373	274	23	59	7	30	90	12	1,046	1,434	2,480
Average Annual Growth Rates													
1980-90	3.70%	1.20%	5.78%	6.45%	5.56%	44.08%	11.12%	0.99%	13.58%	na	6.07%	2.32%	3.93%
1990-97	1.15%	5.12%	-3.93%	-2.29%	-3.77%	-4.74%	-9.51%	5.13%	-0.42%	na	-1.83%	3.02%	0.61%
1997-07	1.90%	1.75%	1.97%	1.32%	0.99%	2.78%	1.97%	1.24%	1.34%	na	2.02%	1.66%	1.81%

*Data calibrated to history through 1996

TABLE B6
STAFF'S OUTLOOK FOR SACRAMENTO MUNICIPAL UTILITY DISTRICT
COINCIDENT PEAK DEMAND FOR LOAD

Year	Total End Use Load	Loss Factor 9.02%			Gross Generation	Private Supply	Region's System Peak	Load Factor
		Gross Losses	Self Gen. Credit	Net Losses				
1980	1,445	130	-	130	1,575	-	1,575	42.28%
1981	1,484	134	-	134	1,618	-	1,618	43.80%
1982	1,365	123	-	123	1,488	-	1,488	47.51%
1983	1,506	136	-	136	1,642	-	1,642	45.13%
1984	1,586	143	-	143	1,729	-	1,729	45.78%
1985	1,698	153	-	153	1,851	-	1,851	46.27%
1986	1,648	149	-	149	1,797	-	1,797	48.59%
1987	1,710	154	-	154	1,864	-	1,864	49.53%
1988	1,937	175	-	175	2,112	-	2,112	45.25%
1989	1,831	165	-	165	1,996	-	1,996	49.42%
1990	2,013	182	-	182	2,195	-	2,195	47.40%
1991	1,987	179	-	179	2,166	-	2,166	47.97%
1992	1,929	174	-	174	2,103	-	2,103	50.29%
1993	1,968	178	-	178	2,146	-	2,146	48.93%
1994	1,875	169	-	169	2,044	-	2,044	51.25%
1995	2,039	184	-	184	2,223	-	2,223	47.35%
1996	2,177	196	-	196	2,373	-	2,373	46.18%
1997	2,100	189	-	189	2,289	-	2,289	48.97%
1998	2,126	192	-	192	2,318	-	2,318	48.54%
1999	2,158	195	-	195	2,353	-	2,353	48.69%
2000	2,193	198	-	198	2,391	-	2,391	48.80%
2001	2,231	201	-	201	2,432	-	2,432	48.85%
2002	2,293	207	-	207	2,500	-	2,500	49.19%
2003	2,328	210	-	210	2,538	-	2,538	49.19%
2004	2,364	213	-	213	2,577	-	2,577	49.18%
2005	2,401	217	-	217	2,618	-	2,618	49.15%
2006	2,439	220	-	220	2,659	-	2,659	49.06%
2007	2,480	224	-	224	2,704	-	2,704	49.05%
Average Annual Growth Rates								
1980-90	3.93%	3.93%	-	3.93%	3.93%	-	3.93%	
1990-97	0.61%	0.61%	-	0.61%	0.61%	-	0.61%	
1997-07	1.81%	1.81%	-	1.81%	1.81%	-	1.81%	

TABLE B7
STAFF'S OUTLOOK FOR THE SCE ELECTRIC PLANNING AREA
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base	Weather	Total
1980	2,506	2,689	2,144	1,039	584	1,701	331	590	432	0	8,288	3,728	12,016
1981	2,595	2,768	2,262	1,427	576	1,695	356	681	434	0	8,598	4,196	12,794
1982	2,173	2,011	2,562	1,862	586	1,721	373	502	451	0	8,368	3,873	12,241
1983	2,411	2,683	2,376	1,708	543	1,629	350	517	438	0	8,264	4,391	12,654
1984	2,280	2,753	2,747	2,426	569	1,926	430	693	485	0	9,130	5,179	14,309
1985	3,044	2,697	2,598	1,369	602	1,815	432	733	487	0	9,711	4,066	13,777
1986	3,146	2,531	2,751	1,365	603	1,833	395	708	507	0	9,943	3,896	13,839
1987	3,149	2,352	2,830	1,481	663	1,947	381	702	535	0	10,205	3,833	14,038
1988	3,256	2,846	3,018	1,705	729	2,061	385	715	572	0	10,736	4,551	15,287
1989	3,366	2,642	3,091	1,442	697	2,014	406	663	609	0	10,846	4,084	14,930
1990	2,815	2,089	3,849	2,722	746	2,358	430	796	729	0	11,722	4,811	16,533
1991	2,781	1,799	3,780	2,536	714	2,216	402	769	713	0	11,374	4,335	15,709
1992	2,893	2,193	3,991	3,292	697	2,330	382	707	787	0	11,787	5,485	17,273
1993	2,882	2,980	3,406	1,950	620	1,943	326	646	733	0	10,555	4,930	15,484
1994	3,741	3,179	3,575	2,059	693	2,042	343	775	699	0	11,867	5,238	17,105
1995	3,673	2,974	3,731	1,668	716	2,163	361	728	725	0	12,097	4,642	16,739
1996	2,871	2,993	4,068	2,973	675	2,258	363	724	740	0	11,699	5,965	17,664
1997	2,911	2,669	4,118	2,873	680	2,312	358	740	801	0	11,921	5,543	17,463
1998	2,943	2,706	4,127	2,871	690	2,351	361	754	813	0	12,040	5,577	17,617
1999	2,983	2,750	4,275	2,962	699	2,397	361	768	825	0	12,309	5,711	18,020
2000	3,024	2,793	4,358	3,008	705	2,436	358	781	838	0	12,501	5,801	18,302
2001	3,063	2,836	4,442	3,054	713	2,479	357	792	851	0	12,698	5,891	18,588
2002	3,103	2,879	4,657	3,184	730	2,545	355	801	864	0	13,056	6,063	19,118
2003	3,147	2,922	4,765	3,242	754	2,641	353	812	877	15	13,366	6,165	19,530
2004	3,191	2,967	4,804	3,261	784	2,757	352	823	889	32	13,632	6,228	19,860
2005	3,238	3,015	4,846	3,281	814	2,863	352	831	902	46	13,892	6,296	20,188
2006	3,285	3,064	4,876	3,295	834	2,945	352	839	912	60	14,102	6,359	20,461
2007	3,334	3,115	4,945	3,331	850	3,016	353	845	920	71	14,335	6,446	20,781
Average Annual Growth Rates													
1980-90	1.23%	-2.23%	7.95%	16.19%	2.78%	3.86%	2.99%	3.48%	6.89%	na	4.14%	2.90%	3.76%
1990-97	0.49%	3.97%	1.00%	0.80%	-1.26%	-0.28%	-2.39%	-1.00%	1.42%	na	0.24%	2.17%	0.80%
1997-07	1.45%	1.67%	2.01%	1.59%	2.50%	3.05%	-0.14%	1.42%	1.48%	na	2.03%	1.63%	1.90%

*Data calibrated to history through 1996

TABLE B8
STAFF'S OUTLOOK FOR THE SCE ELECTRIC PLANNING AREA
COINCIDENT PEAK DEMAND FOR LOAD

		Loss Factor 7.6%						
Year	Total End Use Load	Gross Losses	Self Gen. Credit	Net Lossess	Gross Generation	Private Supply	Region's System Peak	Load Factor
1980	12,016	913	3	910	12,926	39	12,887	56.65%
1981	12,794	972	3	969	13,763	40	13,723	54.96%
1982	12,241	930	4	926	13,166	57	13,110	55.49%
1983	12,654	962	9	953	13,607	125	13,482	55.94%
1984	14,309	1,087	12	1,075	15,384	155	15,228	53.14%
1985	13,777	1,047	14	1,033	14,810	186	14,624	56.51%
1986	13,839	1,052	16	1,036	14,875	215	14,659	57.32%
1987	14,038	1,067	20	1,047	15,085	262	14,823	59.36%
1988	15,287	1,162	29	1,133	16,421	376	16,044	57.27%
1989	14,930	1,135	35	1,100	16,030	463	15,567	59.96%
1990	16,533	1,256	36	1,220	17,752	478	17,274	56.39%
1991	15,709	1,182	37	1,145	16,854	488	16,366	58.30%
1992	17,273	1,304	36	1,268	18,541	473	18,068	54.22%
1993	15,484	1,177	37	1,140	16,624	488	16,136	59.81%
1994	17,105	1,300	41	1,259	18,364	541	17,823	55.26%
1995	16,739	1,272	42	1,230	17,969	551	17,418	56.50%
1996	17,664	1,343	42	1,300	18,965	559	18,405	55.27%
1997	17,463	1,327	43	1,284	18,747	570	18,177	57.41%
1998	17,617	1,339	44	1,295	18,912	577	18,335	57.09%
1999	18,020	1,370	44	1,325	19,345	585	18,760	57.03%
2000	18,302	1,391	45	1,346	19,648	596	19,052	57.00%
2001	18,588	1,413	46	1,367	19,955	601	19,354	56.99%
2002	19,118	1,453	46	1,407	20,525	604	19,921	56.93%
2003	19,530	1,484	46	1,438	20,969	604	20,365	57.07%
2004	19,860	1,509	46	1,463	21,324	604	20,720	57.28%
2005	20,188	1,534	46	1,488	21,676	604	21,072	57.46%
2006	20,461	1,555	46	1,509	21,970	604	21,366	57.58%
2007	20,781	1,579	46	1,533	22,314	604	21,710	57.66%
Average Annual Growth Rates								
1980-90	3.76%	3.76%	-	3.40%	3.73%	-	3.40%	
1990-97	0.80%	0.81%	-	0.75%	0.80%	-	0.75%	
1997-07	1.90%	1.90%	-	1.94%	1.90%	-	1.94%	

TABLE B9
STAFF'S OUTLOOK FOR LOS ANGELES DEPARTMENT OF WATER AND POWER
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base	Weather	Total
1980	618	584	987	638	129	470	53	7	167	0	2,431	1,222	3,653
1981	642	644	1,037	753	139	480	60	9	169	0	2,535	1,398	3,933
1982	656	676	1,073	785	139	472	59	9	155	0	2,563	1,461	4,024
1983	665	485	1,137	868	130	507	66	7	171	0	2,684	1,353	4,037
1984	701	553	1,242	1,023	150	536	64	11	180	0	2,883	1,577	4,460
1985	723	650	1,252	774	143	509	64	10	179	0	2,880	1,424	4,304
1986	764	589	1,321	731	142	533	59	10	181	0	3,009	1,320	4,329
1987	765	703	1,344	778	152	495	56	11	208	0	3,031	1,481	4,512
1988	746	686	1,349	911	145	508	53	14	207	0	3,022	1,597	4,619
1989	728	601	1,367	780	152	471	45	12	213	0	2,988	1,381	4,369
1990	793	746	1,558	888	156	498	41	11	229	0	3,286	1,634	4,920
1991	762	769	1,511	826	162	461	44	9	227	0	3,176	1,595	4,771
1992	811	585	1,595	1,062	164	456	40	11	233	0	3,310	1,647	4,957
1993	724	592	1,427	861	142	375	30	8	217	0	2,925	1,453	4,378
1994	772	540	1,559	1,015	156	386	41	10	238	0	3,161	1,555	4,716
1995	760	682	1,550	856	126	389	59	10	232	0	3,126	1,539	4,665
1996	748	638	1,537	1,062	156	382	61	10	222	0	3,115	1,699	4,814
1997	756	637	1,570	1,062	156	390	61	11	225	0	3,168	1,699	4,867
1998	757	635	1,595	1,074	157	395	61	11	227	0	3,204	1,710	4,913
1999	758	634	1,622	1,087	158	401	61	11	230	0	3,242	1,721	4,962
2000	759	633	1,650	1,100	159	406	61	11	232	0	3,280	1,733	5,013
2001	764	633	1,677	1,112	160	412	62	12	235	0	3,322	1,745	5,066
2002	770	633	1,780	1,162	163	421	61	12	237	0	3,444	1,795	5,239
2003	775	633	1,784	1,162	167	434	62	12	239	6	3,479	1,796	5,275
2004	781	634	1,789	1,163	172	450	62	12	243	12	3,521	1,797	5,318
2005	787	635	1,792	1,163	177	465	63	12	246	18	3,562	1,798	5,360
2006	794	637	1,796	1,163	181	477	64	12	249	23	3,596	1,801	5,397
2007	801	639	1,814	1,170	184	487	64	13	251	28	3,641	1,810	5,451
Average Annual Growth Rates													
1980-90	2.83%	2.77%	5.78%	3.93%	2.11%	0.59%	-2.32%	5.31%	3.74%	na	3.52%	3.37%	3.47%
1990-97	-0.67%	-2.09%	0.11%	2.81%	0.00%	-3.10%	6.99%	-0.60%	-0.27%	na	-0.51%	0.57%	-0.15%
1997-07	0.59%	0.04%	1.55%	1.02%	1.77%	2.48%	0.62%	1.83%	1.18%	na	1.49%	0.65%	1.20%

*Data calibrated to history through 1996

TABLE B10
STAFF'S OUTLOOK FOR LOS ANGELES DEPARTMENT OF WATER AND POWER
COINCIDENT PEAK DEMAND FOR LOAD

Year	Total End Use Load	Loss Factor 11.2%			Gross Generation	Private Supply	Region's System Peak	Load Factor
		Gross Losses	Self Gen. Credit	Net Losses				
1980	3,653	416	-	416	4,069	-	4,069	55.22%
1981	3,933	431	-	431	4,364	-	4,364	53.23%
1982	4,024	432	-	432	4,456	-	4,456	51.59%
1983	4,037	457	5	452	4,489	45	4,444	52.94%
1984	4,460	471	5	466	4,926	45	4,881	50.62%
1985	4,304	473	6	467	4,771	56	4,715	52.41%
1986	4,329	470	6	464	4,793	50	4,743	52.99%
1987	4,512	488	8	480	4,992	70	4,922	52.55%
1988	4,619	503	12	491	5,110	110	5,000	52.98%
1989	4,369	511	9	502	4,871	77	4,794	56.32%
1990	4,920	522	10	512	5,432	93	5,339	50.98%
1991	4,771	482	15	467	5,238	138	5,100	51.76%
1992	4,957	490	17	473	5,430	151	5,279	50.79%
1993	4,378	434	16	418	4,796	146	4,650	58.40%
1994	4,716	506	28	478	5,194	251	4,943	52.78%
1995	4,665	501	28	473	5,138	251	4,887	55.12%
1996	4,814	517	28	489	5,303	254	5,049	54.48%
1997	4,867	523	29	494	5,361	257	5,104	54.34%
1998	4,913	550	29	521	5,434	261	5,173	54.61%
1999	4,962	556	30	526	5,489	264	5,225	54.63%
2000	5,013	561	30	532	5,545	266	5,279	54.65%
2001	5,066	567	30	537	5,604	268	5,336	54.71%
2002	5,239	587	30	557	5,795	270	5,525	54.68%
2003	5,275	591	30	561	5,835	270	5,565	54.91%
2004	5,318	596	30	565	5,883	270	5,613	55.16%
2005	5,360	600	30	570	5,930	270	5,660	55.39%
2006	5,397	604	30	574	5,971	270	5,701	55.60%
2007	5,451	610	30	580	6,031	270	5,761	55.75%
Average Annual Growth Rates								
1980-90	3.47%	2.55%	-	2.30%	3.35%	-	3.12%	
1990-97	-0.15%	0.02%	-	-0.49%	-0.19%	-	-0.63%	
1997-07	1.20%	1.68%	-	1.75%	1.25%	-	1.29%	

TABLE B11
STAFF'S OUTLOOK FOR SDG&E'S ELECTRIC SERVICE TERRITORY
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base	Weather	Total
1980	528	176	438	442	4	131	12	25	115	0	1,253	617	1,870
1981	496	184	448	479	4	143	14	29	132	0	1,265	663	1,928
1982	486	254	429	412	3	129	13	24	121	0	1,205	666	1,871
1983	469	286	422	442	3	121	14	22	116	0	1,168	728	1,896
1984	517	314	494	535	4	142	17	28	114	0	1,316	850	2,166
1985	596	187	568	485	3	161	20	27	124	0	1,500	672	2,172
1986	713	189	573	416	3	167	21	26	114	0	1,617	605	2,222
1987	610	147	596	486	3	186	18	25	137	0	1,576	633	2,209
1988	656	243	675	577	3	208	19	29	177	0	1,766	821	2,587
1989	606	176	688	562	4	208	24	27	175	0	1,732	738	2,470
1990	660	230	800	581	5	248	35	26	195	0	1,969	811	2,780
1991	684	165	816	662	4	241	32	24	200	0	2,001	827	2,828
1992	712	279	875	663	5	262	33	24	224	0	2,134	942	3,076
1993	702	215	800	523	4	218	23	19	195	0	1,959	738	2,697
1994	715	368	860	658	4	242	21	24	215	0	2,081	1,026	3,107
1995	736	348	899	553	5	247	27	27	214	0	2,154	901	3,055
1996	706	356	892	663	4	231	23	26	204	0	2,086	1,019	3,105
1997	711	334	895	637	4	232	24	26	202	0	2,094	971	3,065
1998	721	343	919	646	4	237	24	27	199	0	2,131	990	3,120
1999	731	354	936	652	4	243	24	28	197	0	2,163	1,005	3,169
2000	742	364	953	657	4	249	25	29	195	0	2,196	1,022	3,218
2001	752	375	970	662	4	256	25	30	193	0	2,230	1,037	3,268
2002	763	387	1,008	677	4	266	25	31	193	0	2,290	1,064	3,354
2003	773	397	1,022	681	4	280	26	32	192	1	2,330	1,078	3,408
2004	784	408	1,026	679	4	297	26	33	194	3	2,367	1,087	3,454
2005	795	420	1,030	677	4	314	27	34	195	4	2,403	1,097	3,500
2006	807	432	1,033	675	4	328	28	35	196	6	2,436	1,107	3,543
2007	819	444	1,046	678	4	342	29	35	198	7	2,479	1,123	3,602
Average Annual Growth Rates													
1980-90	2.50%	3.07%	8.27%	3.15%	2.63%	8.99%	18.51%	0.38%	6.99%	na	5.72%	3.13%	4.87%
1990-97	1.11%	6.44%	1.69%	1.38%	-3.56%	-0.93%	-4.46%	0.13%	0.51%	na	0.91%	2.82%	1.46%
1997-07	1.51%	3.32%	1.69%	0.65%	2.11%	4.73%	1.75%	3.33%	-0.19%	na	1.84%	1.56%	1.75%

*Data calibrated to history through 1996

TABLE B12
STAFF'S OUTLOOK FOR SDG&E'S ELECTRIC SERVICE TERRITORY
COINCIDENT PEAK DEMAND FOR LOAD

Year	Total End Use Load	Loss Factor 9.6%			Gross Generation	Private Supply	Region's System Peak	Load Factor
		Gross Losses	Self Gen. Credit	Net Lossess				
1980	1,870	180	-	180	2,050	-	2,050	59.39%
1981	1,928	185	-	185	2,113	-	2,113	58.47%
1982	1,871	177	-	177	2,048	-	2,048	59.94%
1983	1,896	180	1	179	2,075	6	2,069	60.65%
1984	2,166	215	2	213	2,379	19	2,360	56.71%
1985	2,172	214	3	211	2,383	32	2,351	58.76%
1986	2,222	220	4	216	2,438	42	2,396	59.96%
1987	2,209	213	6	207	2,416	61	2,355	63.91%
1988	2,587	262	6	256	2,843	67	2,776	58.41%
1989	2,470	242	6	236	2,706	62	2,644	64.38%
1990	2,780	273	7	266	3,046	68	2,978	60.76%
1991	2,828	240	6	234	3,062	62	3,000	59.10%
1992	3,076	269	6	263	3,339	61	3,278	57.67%
1993	2,697	257	6	251	2,948	57	2,891	65.40%
1994	3,107	296	6	291	3,398	59	3,339	58.02%
1995	3,055	291	6	286	3,341	59	3,282	59.50%
1996	3,105	296	6	291	3,396	59	3,337	60.41%
1997	3,065	292	6	287	3,352	59	3,293	63.82%
1998	3,120	300	6	294	3,414	59	3,355	59.93%
1999	3,169	304	6	299	3,467	59	3,408	59.90%
2000	3,218	309	6	303	3,521	59	3,462	59.86%
2001	3,268	314	6	308	3,576	59	3,517	59.83%
2002	3,354	322	6	316	3,670	59	3,611	59.78%
2003	3,408	327	6	322	3,730	59	3,671	59.83%
2004	3,454	332	6	326	3,780	59	3,721	59.91%
2005	3,500	336	6	330	3,830	59	3,771	59.99%
2006	3,543	340	6	334	3,878	59	3,819	60.05%
2007	3,602	346	6	340	3,942	59	3,883	60.07%
Average Annual Growth Rates								
1980-90	4.87%	5.17%	-	4.80%	4.86%	-	4.53%	
1990-97	1.46%	1.02%	-	1.09%	1.43%	-	1.51%	
1997-07	1.75%	1.82%	-	1.86%	1.76%	-	1.79%	

TABLE B13
STAFF'S OUTLOOK FOR BURBANK, GLENDALE & PASADENA
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base	Weather	Total
1980	73	119	158	109	1	92	3	1	9	0	336	228	564
1981	83	165	164	99	1	89	2	1	9	0	348	264	612
1982	82	129	168	115	1	88	3	1	10	0	352	244	596
1983	78	150	160	126	1	79	5	1	11	0	334	276	610
1984	82	170	170	143	1	88	4	2	12	0	359	313	672
1985	96	168	181	101	1	89	5	2	14	0	388	269	657
1986	100	164	189	93	1	89	5	2	14	0	400	258	658
1987	89	137	189	138	1	92	5	2	15	0	393	275	668
1988	90	149	195	155	1	92	7	2	14	0	400	304	704
1989	91	162	186	104	1	76	6	2	13	0	374	266	640
1990	103	205	224	133	1	81	9	2	15	0	435	338	773
1991	93	154	227	154	1	64	9	2	14	0	410	308	718
1992	98	165	241	172	1	63	9	2	16	0	430	337	767
1993	99	173	223	111	1	48	8	2	14	0	395	284	679
1994	100	185	258	140	1	49	10	2	15	0	435	325	760
1995	100	150	277	146	1	41	10	2	16	0	446	297	743
1996	95	134	266	190	1	36	10	2	14	0	425	324	749
1997	96	134	275	196	1	37	11	2	14	0	435	330	765
1998	96	134	279	199	1	37	11	2	15	0	440	333	773
1999	96	134	284	202	1	38	11	2	15	0	446	336	783
2000	96	135	290	205	1	38	11	2	15	0	453	339	792
2001	97	135	294	207	1	39	11	2	15	0	458	342	800
2002	98	135	317	219	1	40	11	2	15	0	483	354	837
2003	98	136	317	219	1	42	11	2	15	1	487	355	842
2004	99	136	318	219	1	43	12	2	15	2	491	355	846
2005	99	137	318	219	1	45	12	2	16	2	495	356	851
2006	100	137	318	219	1	46	12	2	16	3	498	357	855
2007	101	138	319	220	1	48	12	2	16	3	502	358	861
Average Annual Growth Rates													
1980-90	4.09%	7.26%	4.13%	2.22%	0.67%	-1.18%	23.45%	30.74%	6.94%	na	2.93%	4.85%	3.71%
1990-97	-0.94%	-4.95%	3.26%	6.77%	-2.04%	-7.83%	2.41%	-1.64%	-0.65%	na	0.00%	-0.34%	-0.15%
1997-07	0.53%	0.29%	1.64%	1.23%	2.63%	2.93%	1.69%	0.00%	1.16%	na	1.56%	0.85%	1.25%

*Data calibrated to history through 1996

TABLE B14
STAFF'S OUTLOOK FOR BURBANK, GLENDALE & PASADENA
COINCIDENT PEAK DEMAND FOR LOAD

Year	Total End Use Load	Loss Factor 5.1%			Gross Generation	Private Supply	Region's System Peak	Load Factor
		Gross Losses	Self Gen. Credit	Net Losses				
1980	564	29	-	29	593	-	593	48.06%
1981	612	31	-	31	643	-	643	45.74%
1982	596	30	-	30	626	-	626	45.94%
1983	610	31	-	31	641	-	641	45.53%
1984	672	34	-	34	706	-	706	44.92%
1985	657	34	-	34	691	-	691	46.90%
1986	658	34	-	34	692	-	692	46.76%
1987	668	34	-	34	702	-	702	47.06%
1988	704	36	-	36	740	-	740	46.39%
1989	640	33	-	33	673	-	673	50.18%
1990	773	39	-	39	812	-	812	43.59%
1991	718	37	-	37	755	-	755	43.87%
1992	767	39	-	39	806	-	806	43.62%
1993	679	35	-	35	714	-	714	50.37%
1994	760	39	-	39	799	-	799	45.04%
1995	743	38	-	38	781	-	781	47.39%
1996	749	38	-	38	787	-	787	48.20%
1997	765	39	-	39	804	-	804	47.83%
1998	773	39	-	39	813	-	813	47.51%
1999	783	40	-	40	823	-	823	47.55%
2000	792	40	-	40	833	-	833	47.59%
2001	800	41	-	41	841	-	841	47.66%
2002	837	43	-	43	880	-	880	47.81%
2003	842	43	-	43	884	-	884	47.95%
2004	846	43	-	43	889	-	889	48.14%
2005	851	43	-	43	894	-	894	48.27%
2006	855	44	-	44	898	-	898	48.41%
2007	861	44	-	44	905	-	905	48.52%
Average Annual Growth Rates								
1980-90	3.71%	3.71%	-	3.71%	3.71%	-	3.71%	
1990-97	-0.15%	-0.15%	-	-0.15%	-0.15%	-	-0.15%	
1997-07	1.25%	1.25%	-	1.25%	1.25%	-	1.25%	

TABLE B15
STAFF'S OUTLOOK FOR THE OTHER ELECTRIC PLANNING AREA
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base	Weather	Total
1980	-	-	-	-	-	-	-	-	-	-	263	349	611
1981	-	-	-	-	-	-	-	-	-	-	323	311	635
1982	-	-	-	-	-	-	-	-	-	-	317	291	607
1983	-	-	-	-	-	-	-	-	-	-	288	304	593
1984	-	-	-	-	-	-	-	-	-	-	289	332	622
1985	-	-	-	-	-	-	-	-	-	-	338	294	632
1986	-	-	-	-	-	-	-	-	-	-	337	292	630
1987	-	-	-	-	-	-	-	-	-	-	340	315	656
1988	-	-	-	-	-	-	-	-	-	-	284	413	698
1989	-	-	-	-	-	-	-	-	-	-	386	346	732
1990	-	-	-	-	-	-	-	-	-	-	374	381	756
1991	-	-	-	-	-	-	-	-	-	-	377	382	759
1992	-	-	-	-	-	-	-	-	-	-	436	366	802
1993	-	-	-	-	-	-	-	-	-	-	427	395	822
1994	-	-	-	-	-	-	-	-	-	-	502	356	858
1995	-	-	-	-	-	-	-	-	-	-	361	511	872
1996	-	-	-	-	-	-	-	-	-	-	381	511	893
1997	-	-	-	-	-	-	-	-	-	-	367	519	886
1998	-	-	-	-	-	-	-	-	-	-	374	526	900
1999	-	-	-	-	-	-	-	-	-	-	382	534	916
2000	-	-	-	-	-	-	-	-	-	-	389	542	932
2001	-	-	-	-	-	-	-	-	-	-	396	550	946
2002	-	-	-	-	-	-	-	-	-	-	404	555	959
2003	-	-	-	-	-	-	-	-	-	-	411	564	975
2004	-	-	-	-	-	-	-	-	-	-	417	572	989
2005	-	-	-	-	-	-	-	-	-	-	426	583	1,009
2006	-	-	-	-	-	-	-	-	-	-	432	592	1,024
2007	-	-	-	-	-	-	-	-	-	-	438	600	1,038
Average Annual Growth Rates													
1980-90	na	na	na	na	na	na	na	na	na	na	4.26%	0.93%	2.36%
1990-97	na	na	na	na	na	na	na	na	na	na	-0.28%	5.16%	2.46%
1997-07	na	na	na	na	na	na	na	na	na	na	1.92%	1.57%	1.71%

*Data calibrated to history through 1996

TABLE B16
STAFF'S OUTLOOK FOR THE OTHER ELECTRIC PLANNING AREA
COINCIDENT PEAK DEMAND FOR LOAD

		Loss Factor 6.0%						
Year	Total End Use Load	Gross Losses	Self Gen. Credit	Net Lossess	Gross Generation	Private Supply	Region's System Peak	Load Factor
1980	611	37	-	37	648	-	648	50.00%
1981	635	38	-	38	673	-	673	50.00%
1982	607	36	-	36	643	-	643	50.00%
1983	593	36	-	36	629	-	629	50.00%
1984	622	37	-	37	659	-	659	50.00%
1985	632	38	-	38	670	-	670	50.00%
1986	630	38	-	38	668	-	668	50.00%
1987	656	39	-	39	695	-	695	50.00%
1988	698	42	-	42	740	-	740	50.00%
1989	732	44	-	44	776	-	776	50.00%
1990	756	45	-	45	801	-	801	50.00%
1991	759	46	-	46	805	-	805	50.00%
1992	802	48	-	48	850	-	850	50.00%
1993	822	49	-	49	871	-	871	50.00%
1994	858	51	-	51	909	-	909	50.00%
1995	872	52	-	52	924	-	924	50.00%
1996	893	54	-	54	946	-	946	50.00%
1997	886	53	-	53	939	-	939	50.00%
1998	900	54	-	54	954	-	954	50.00%
1999	916	55	-	55	971	-	971	50.00%
2000	932	56	-	56	988	-	988	50.00%
2001	946	57	-	57	1,002	-	1,002	50.00%
2002	959	58	-	58	1,017	-	1,017	50.00%
2003	975	58	-	58	1,033	-	1,033	50.00%
2004	989	59	-	59	1,049	-	1,049	50.00%
2005	1,009	61	-	61	1,070	-	1,070	50.00%
2006	1,024	61	-	61	1,085	-	1,085	50.00%
2007	1,038	62	-	62	1,100	-	1,100	50.00%
Average Annual Growth Rates								
1980-90	2.36%	2.16%	-	2.16%	2.35%	-	2.35%	
1990-97	2.46%	2.59%	-	2.59%	2.47%	-	2.47%	
1997-07	1.71%	1.71%	-	1.71%	1.71%	-	1.71%	

TABLE B17
STAFF'S OUTLOOK THE DEPARTMENT OF WATER RESOURCES
ELECTRIC END-USE COINCIDENT PEAK DEMAND BY SECTOR (MW)*

Year	Resid. Base	Resid. Weather	Comm. Base	Comm. Weather	Process	Assembly	Mining	Agricult.	TCU & Str Lght.	Electric Vehicles	Base	Weather	Total
1980	-	-	-	-	-	-	-	454	-	-	454	-	454
1981	-	-	-	-	-	-	-	620	-	-	620	-	620
1982	-	-	-	-	-	-	-	651	-	-	651	-	651
1983	-	-	-	-	-	-	-	381	-	-	381	-	381
1984	-	-	-	-	-	-	-	591	-	-	591	-	591
1985	-	-	-	-	-	-	-	709	-	-	709	-	709
1986	-	-	-	-	-	-	-	879	-	-	879	-	879
1987	-	-	-	-	-	-	-	583	-	-	583	-	583
1988	-	-	-	-	-	-	-	979	-	-	979	-	979
1989	-	-	-	-	-	-	-	1,163	-	-	1,163	-	1,163
1990	-	-	-	-	-	-	-	1,311	-	-	1,311	-	1,311
1991	-	-	-	-	-	-	-	611	-	-	611	-	611
1992	-	-	-	-	-	-	-	395	-	-	395	-	395
1993	-	-	-	-	-	-	-	777	-	-	777	-	777
1994	-	-	-	-	-	-	-	846	-	-	846	-	846
1995	-	-	-	-	-	-	-	484	-	-	484	-	484
1996	-	-	-	-	-	-	-	597	-	-	597	-	597
1997	-	-	-	-	-	-	-	688	-	-	688	-	688
1998	-	-	-	-	-	-	-	688	-	-	688	-	688
1999	-	-	-	-	-	-	-	688	-	-	688	-	688
2000	-	-	-	-	-	-	-	688	-	-	688	-	688
2001	-	-	-	-	-	-	-	688	-	-	688	-	688
2002	-	-	-	-	-	-	-	688	-	-	688	-	688
2003	-	-	-	-	-	-	-	688	-	-	688	-	688
2004	-	-	-	-	-	-	-	688	-	-	688	-	688
2005	-	-	-	-	-	-	-	688	-	-	688	-	688
2006	-	-	-	-	-	-	-	688	-	-	688	-	688
2007	-	-	-	-	-	-	-	688	-	-	688	-	688
Average Annual Growth Rates													
1980-90	na	na	na	na	na	na	na	18.88%	na	na	18.88%	na	18.88%
1990-97	na	na	na	na	na	na	na	-6.79%	na	na	-6.79%	na	-6.79%
1997-07	na	na	na	na	na	na	na	0.00%	na	na	0.00%	na	0.00%

*Data calibrated to history through 1996

TABLE B18
STAFF'S OUTLOOK FOR THE DEPARTMENT OF WATER RESOURCES
COINCIDENT PEAK DEMAND FOR LOAD

Year	Total End Use Load	Loss Factor 5.0%			Gross Generation	Private Supply	Region's System Peak	Load Factor
		Gross Losses	Self Gen. Credit	Net Lossess				
1980	454		-	-	454	-	454	84.33%
1981	620		-	-	620	-	620	96.92%
1982	651		-	-	651	-	651	91.04%
1983	381		-	-	381	-	381	74.82%
1984	591		-	-	591	-	591	64.69%
1985	709		-	-	709	-	709	87.11%
1986	879		-	-	879	-	879	65.34%
1987	583		-	-	583	-	583	92.69%
1988	979		-	-	979	-	979	69.13%
1989	1,163	16	-	16	1,179	-	1,179	72.76%
1990	1,311	52	-	52	1,363	-	1,363	71.15%
1991	611	44	-	44	655	-	655	82.21%
1992	395	26	-	26	421	-	421	118.14%
1993	777	23	-	23	800	-	800	64.23%
1994	846	53	-	53	899	-	899	66.73%
1995	484	19	-	19	503	-	503	84.02%
1996	597	34	-	34	631	-	631	98.41%
1997	688	40	-	40	728	-	728	91.32%
1998	688	40	-	40	728	-	728	153.26%
1999	688	40	-	40	728	-	728	153.26%
2000	688	40	-	40	728	-	728	153.26%
2001	688	40	-	40	728	-	728	153.26%
2002	688	40	-	40	728	-	728	153.26%
2003	688	40	-	40	728	-	728	153.26%
2004	688	40	-	40	728	-	728	153.26%
2005	688	40	-	40	728	-	728	153.26%
2006	688	40	-	40	728	-	728	153.26%
2007	688	40	-	40	728	-	728	153.26%
Average Annual Growth Rates								
1980-90	18.88%	na	-	na	20.02%	-	20.02%	
1990-97	-6.79%	-3.30%	-	-3.30%	-6.66%	-	-6.66%	
1997-07	0.00%	0.00%	-	0.00%	0.00%	-	0.00%	

APPENDIX C: NATURAL GAS END-USE CONSUMPTION

Appendix C provides historical natural gas end-use consumption and Staff's outlook, by sector, for California's major gas service territories and counties.

TABLE C1
STAFF'S STATEWIDE OUTLOOK FOR CALIFORNIA
NATURAL GAS END-USE CONSUMPTION BY SECTOR (Millions Therms)*

Year	Residential	Commercial	TCU	Assembly	Process	Mining	Agriculture	Natural Gas Vehicles	Total
1980	5,840	1,646	223	1,882	2,704	1,176	156	-	13,627
1981	5,195	1,574	227	1,847	2,617	1,078	148	-	12,686
1982	5,589	1,751	245	1,457	2,262	1,015	135	-	12,454
1983	5,169	1,642	217	1,293	1,431	842	111	-	10,706
1984	4,911	1,665	230	1,258	1,282	903	121	-	10,370
1985	5,493	1,777	242	1,388	1,620	1,013	126	-	11,658
1986	4,809	1,629	226	1,341	1,243	1,031	108	-	10,387
1987	5,167	1,741	234	1,365	1,479	1,074	117	-	11,177
1988	5,156	1,783	287	1,466	1,656	1,379	130	-	11,857
1989	5,383	1,955	257	1,561	1,441	1,622	142	-	12,362
1990	5,212	1,895	266	1,523	1,678	1,028	147	-	11,748
1991	5,267	1,720	295	1,372	1,479	828	127	-	11,088
1992	5,029	1,631	273	1,219	1,347	1,459	118	-	11,077
1993	5,138	1,784	234	1,151	1,754	1,360	108	-	11,528
1994	5,283	1,815	195	1,172	1,803	1,413	151	-	11,832
1995	4,780	1,749	175	1,087	1,918	2,146	130	-	11,985
1996	4,819	1,853	191	1,090	2,463	2,284	146	-	12,845
1997	4,811	1,966	191	1,182	2,361	2,306	160	-	12,978
1998	4,892	1,946	200	1,168	2,572	2,278	139	22	13,218
1999	4,910	1,986	204	1,201	2,632	2,278	141	30	13,381
2000	4,946	2,031	219	1,245	2,703	2,242	142	41	13,569
2001	4,963	2,062	219	1,269	2,741	2,222	143	79	13,698
2002	4,981	2,093	219	1,275	2,760	2,208	145	107	13,789
2003	5,002	2,120	219	1,290	2,793	2,184	145	131	13,885
2004	5,026	2,148	221	1,305	2,819	2,151	145	150	13,964
2005	5,053	2,174	222	1,314	2,838	2,126	145	165	14,036
2006	5,083	2,202	223	1,325	2,856	2,116	145	179	14,129
2007	5,115	2,223	224	1,343	2,886	2,108	145	192	14,235
Average Annual Growth Rates									
1980-92	-1.16%	-0.08%	1.87%	-2.93%	-4.18%	2.00%	-1.99%	na	-1.56%
1992-97	-0.87%	4.12%	-6.00%	-0.61%	15.05%	11.60%	7.04%	na	3.43%
1997-07	0.63%	1.31%	1.72%	1.36%	2.23%	-0.86%	-0.95%	na	0.97%

*Historical data through 1997

TABLE C2
STAFF'S OUTLOOK FOR THE PG&E GAS SERVICE TERRITORY
NATURAL GAS END-USE CONSUMPTION BY SECTOR (Millions Therms)*

Year	Residential	Commercial	TCU	Assembly	Process	Mining	Agriculture	Natural Gas Vehicles	Total
1980	2,298	733	117	637	1,656	233	78	-	5,752
1981	2,079	688	121	643	1,542	213	66	-	5,353
1982	2,226	804	132	501	1,287	201	65	-	5,215
1983	2,093	753	117	441	721	53	56	-	4,234
1984	2,036	793	123	404	696	68	59	-	4,180
1985	2,236	787	127	484	1,070	219	60	-	4,983
1986	1,958	739	119	459	737	83	56	-	4,151
1987	2,034	775	120	481	910	138	62	-	4,521
1988	2,015	727	175	518	919	194	68	-	4,615
1989	2,168	816	136	551	775	202	78	-	4,727
1990	2,118	905	135	629	1,034	223	79	-	5,122
1991	2,169	817	133	539	970	392	67	-	5,089
1992	1,961	739	103	489	904	151	58	-	4,406
1993	2,124	779	105	476	1,078	89	48	-	4,699
1994	2,209	854	104	464	1,124	66	83	-	4,904
1995	1,964	797	82	420	1,240	72	68	-	4,643
1996	1,980	850	86	437	1,412	41	75	-	4,881
1997	1,976	927	80	498	1,455	25	84	-	5,044
1998	2,016	862	82	472	1,478	41	72	3	5,026
1999	2,025	877	86	487	1,512	42	72	5	5,105
2000	2,044	901	100	506	1,554	42	73	6	5,227
2001	2,050	909	100	517	1,576	42	74	12	5,280
2002	2,056	918	100	522	1,587	42	75	16	5,316
2003	2,063	925	100	529	1,605	42	75	20	5,358
2004	2,070	931	100	536	1,619	42	75	22	5,396
2005	2,080	937	101	541	1,628	42	75	25	5,427
2006	2,090	943	101	547	1,638	42	75	27	5,463
2007	2,101	946	102	556	1,654	42	75	29	5,505
Average Annual Growth Rates									
1980-92	-1.22%	0.07%	-0.94%	-1.93%	-3.78%	-2.94%	-2.13%	na	-1.95%
1992-97	0.15%	5.07%	-4.59%	0.35%	12.18%	-16.64%	9.04%	na	2.89%
1997-07	0.64%	0.21%	2.78%	1.16%	1.37%	6.69%	-1.11%	na	0.91%

*Historical data through 1997

TABLE C3
STAFF'S OUTLOOK FOR THE SCG GAS SERVICE TERRITORY
NATURAL GAS END-USE CONSUMPTION BY SECTOR (Millions Therms)*

Year	Residential	Commercial	TCU	Assembly	Process	Mining	Agriculture	Natural Gas Vehicles	Total
1980	3,184	800	87	1,209	1,041	942	65	-	7,328
1981	2,784	782	91	1,170	1,068	863	71	-	6,828
1982	3,006	838	97	919	970	812	61	-	6,702
1983	2,747	781	84	826	705	787	48	-	5,979
1984	2,545	749	81	841	581	832	53	-	5,681
1985	2,870	864	86	873	545	792	55	-	6,085
1986	2,507	779	81	842	500	945	44	-	5,698
1987	2,740	850	89	834	563	933	48	-	6,056
1988	2,741	913	85	900	730	1,181	54	-	6,605
1989	2,806	964	85	972	658	1,414	53	-	6,952
1990	2,688	837	72	886	636	799	59	-	5,976
1991	2,705	815	103	782	500	431	54	-	5,390
1992	2,694	771	81	699	434	1,304	52	-	6,036
1993	2,620	793	65	644	667	1,267	49	-	6,106
1994	2,666	791	65	679	669	1,342	58	-	6,269
1995	2,459	765	67	630	670	2,068	53	-	6,713
1996	2,482	796	74	609	1,048	2,239	60	-	7,308
1997	2,441	805	84	640	902	2,275	67	-	7,214
1998	2,502	859	76	652	1,091	2,233	57	18	7,487
1999	2,509	879	77	668	1,116	2,232	57	24	7,562
2000	2,518	896	77	691	1,146	2,196	58	33	7,614
2001	2,527	915	78	702	1,161	2,176	58	64	7,682
2002	2,536	933	79	703	1,169	2,162	59	86	7,728
2003	2,548	951	79	710	1,184	2,137	59	104	7,774
2004	2,562	969	80	717	1,197	2,104	59	120	7,807
2005	2,577	986	80	720	1,206	2,079	59	132	7,839
2006	2,593	1,004	80	723	1,215	2,069	59	143	7,888
2007	2,611	1,019	81	731	1,228	2,060	59	153	7,943
Average Annual Growth Rates									
1980-92	-1.28%	-0.31%	-0.53%	-3.52%	-4.86%	3.20%	-1.65%	na	-1.47%
1992-97	-1.88%	0.89%	0.60%	-1.69%	21.58%	14.90%	5.63%	na	3.90%
1997-07	0.70%	2.66%	-0.34%	1.43%	3.61%	-0.94%	-1.17%	na	1.01%

*Historical data through 1997

TABLE C4
STAFF'S OUTLOOK FOR SDG&E'S GAS SERVICE TERRITORY
NATURAL GAS END-USE CONSUMPTION BY SECTOR (Millions Therms)*

Year	Residential	Commercial	TCU	Assembly	Process	Mining	Agriculture	Natural Gas Vehicles	Total
1980	312	92	14	34	6	1	11	-	470
1981	288	88	14	33	4	1	9	-	438
1982	318	96	15	36	4	1	8	-	478
1983	296	94	15	25	3	2	6	-	441
1984	283	105	24	12	4	2	7	-	437
1985	327	106	26	31	4	2	9	-	505
1986	295	91	24	40	4	2	6	-	462
1987	331	101	23	50	4	3	7	-	519
1988	336	124	27	48	5	3	9	-	552
1989	340	159	36	38	5	5	10	-	592
1990	334	137	58	7	5	6	9	-	556
1991	332	66	57	50	6	4	6	-	522
1992	307	100	86	30	6	4	8	-	541
1993	322	189	61	31	6	3	10	-	621
1994	334	149	22	28	6	2	10	-	550
1995	299	172	23	35	5	2	9	-	545
1996	300	194	28	42	3	0	11	-	578
1997	331	219	25	43	2	2	9	-	631
1998	307	208	39	44	3	0	11	1	612
1999	309	212	38	45	3	0	11	2	620
2000	311	216	38	47	3	0	11	2	628
2001	313	220	38	48	3	0	11	4	637
2002	316	223	37	48	3	0	11	5	645
2003	318	227	37	49	3	0	11	7	652
2004	320	230	37	51	3	0	11	7	660
2005	323	233	38	52	4	0	11	8	669
2006	326	236	38	53	4	0	11	9	677
2007	330	239	38	54	4	0	11	10	685
Average Annual Growth Rates									
1980-92	-0.14%	0.69%	43.39%	-0.97%	0.58%	23.35%	-2.10%	na	1.26%
1992-97	1.57%	23.87%	-14.18%	8.49%	-13.16%	-11.80%	3.10%	na	3.34%
1997-07	-0.05%	0.90%	5.32%	2.55%	7.59%	-8.05%	1.95%	na	0.86%

*Historical data through 1997

TABLE C5
STAFF'S OUTLOOK FOR THE OTHER GAS SERVICE TERRITORY
NATURAL GAS END-USE CONSUMPTION BY SECTOR (Millions Therms)*

Year	Residential	Commercial	TCU	Assembly	Process	Mining	Agriculture	Natural Gas Vehicles	Total
1980	46	20	6	1	2	0	2	-	78
1981	43	16	2	1	2	0	2	-	66
1982	40	13	2	0	2	0	1	-	59
1983	33	15	1	0	2	0	1	-	52
1984	47	19	2	0	2	0	2	-	72
1985	59	20	2	0	2	1	2	-	85
1986	50	19	2	0	2	0	2	-	76
1987	62	15	1	0	2	0	1	-	81
1988	63	18	1	0	2	0	0	-	86
1989	69	17	1	0	2	1	1	-	91
1990	72	17	1	0	3	1	1	-	95
1991	61	21	1	1	3	1	1	-	88
1992	67	20	3	1	3	1	1	-	94
1993	72	22	3	1	3	0	1	-	102
1994	75	21	4	1	3	3	1	-	109
1995	57	14	3	1	3	4	0	-	83
1996	57	14	3	1	0	4	0	-	79
1997	63	15	3	1	2	4	0	-	88
1998	66	17	3	1	0	4	0	-	92
1999	67	17	3	1	0	4	0	-	94
2000	73	18	3	1	0	4	0	-	99
2001	73	18	3	1	0	4	0	-	100
2002	73	18	3	1	0	4	0	-	100
2003	73	18	3	1	0	4	0	-	101
2004	73	18	3	1	0	4	0	-	101
2005	73	18	3	1	0	4	0	-	101
2006	73	19	3	1	0	5	0	-	102
2007	73	19	3	1	0	5	0	-	102
Average Annual Growth Rates									
1980-92	3.79%	-0.04%	-4.24%	-4.97%	6.76%	5.43%	-6.22%	na	1.81%
1992-97	-1.17%	-5.12%	0.59%	31.00%	-9.01%	116.52%	-11.19%	na	-1.44%
1997-07	1.64%	2.59%	0.79%	-0.42%	-8.74%	3.20%	2.02%	na	1.61%

*Historical data through 1997

TABLE C6
STAFFS OUTLOOK FOR CALIFORNIA'S COUNTIES
NATURAL GAS END-USE CONSUMPTION (Millions Therms)

COUNTY	Historical End-Use Consumption								Growth Rates		
	1990	1991	1992	1993	1994	1995	1996	1997	1990-93	1993-97	1990-97
ALAMEDA	549	543	528	558	300	546	481	494	0.57%	-2.87%	-1.42%
ALPINE	0	0	0	0	0	0	0	0	na	na	na
AMADOR	15	15	20	23	18	25	7	7	17.05%	-16.91%	-7.30%
BUTTE	46	47	45	49	53	52	41	42	2.06%	-3.76%	-1.40%
CALAVERAS	1	1	1	1	1	1	2	2	6.31%	29.83%	22.98%
COLUSA	9	8	12	12	12	17	14	15	12.79%	5.60%	9.91%
CONTRA COSTA	918	755	860	1,017	1,062	1,335	1,104	1,149	3.59%	3.23%	3.58%
DEL NORTE	0	0	0	0	0	0	0	0	na	na	na
EL DORADO	8	3	4	4	5	5	5	6	-16.79%	8.91%	-4.66%
FRESNO	352	419	351	357	394	409	288	293	0.44%	-4.45%	-2.39%
GLENN	16	17	18	21	23	29	12	13	9.33%	-9.88%	-3.23%
HUMBOLDT	59	60	89	66	43	66	72	75	3.47%	3.51%	3.71%
IMPERIAL	13	9	16	20	26	25	46	48	17.67%	34.54%	37.77%
INYO	0	0	0	0	0	0	0	0	na	na	na
KERN	1,629	1,717	1,165	578	458	462	786	719	-21.50%	6.06%	-7.99%
KINGS	35	34	38	37	44	33	40	41	2.44%	2.72%	2.71%
LAKE	0	0	0	0	0	0	0	0	na	na	na
LASSEN	0	0	0	0	0	0	0	0	na	na	na
LOS ANGELES	2,452	2,099	2,318	2,788	3,032	2,985	4,290	4,300	4.57%	13.55%	10.76%
MADERA	50	45	65	68	68	71	43	45	12.07%	-8.50%	-1.45%
MARIN	87	88	82	88	94	85	88	90	0.58%	0.35%	0.45%
MARIPOSA	0	0	0	0	0	0	0	0	na	na	na
MENDOCINO	16	16	23	28	30	38	32	33	26.05%	4.77%	16.02%
MERCED	84	90	98	95	118	113	81	84	4.31%	-2.83%	0.02%
MODOC	0	0	0	0	0	0	0	0	na	na	na
MONO	0	0	0	0	0	0	0	0	na	na	na
MONTEREY	177	171	168	169	150	133	126	132	-1.49%	-5.43%	-3.61%
NAPA	40	41	39	39	41	36	32	33	-0.49%	-4.34%	-2.65%
NEVADA	6	7	7	8	8	7	14	15	8.26%	23.62%	20.38%
ORANGE	615	594	623	632	679	630	734	734	0.91%	4.01%	2.74%
PLACER	55	56	57	66	67	65	54	56	6.96%	-4.06%	0.18%
PLUMAS	0	0	0	0	0	0	0	0	na	na	na
RIVERSIDE	334	392	385	374	400	332	342	348	4.06%	-1.79%	0.59%
SACRAMENTO	357	358	382	390	401	367	336	344	3.09%	-2.97%	-0.53%
SAN BENITO	19	18	17	20	20	20	16	16	1.09%	-4.47%	-2.17%
SAN BERNARDINO	513	444	522	565	668	634	628	628	3.39%	2.78%	3.20%
SAN DIEGO	611	424	488	619	585	551	570	592	0.44%	-1.10%	-0.45%
SAN FRANCISCO	315	322	287	288	306	276	289	298	-2.91%	0.85%	-0.81%
SAN JOAQUIN	320	285	314	340	334	340	220	228	2.16%	-8.26%	-4.10%
SAN LUIS OBISPO	57	60	56	60	60	54	65	65	1.46%	2.47%	2.10%
SAN MATEO	234	238	217	233	252	220	228	234	-0.14%	0.12%	0.01%
SANTA BARBARA	122	116	130	140	171	167	150	151	4.82%	2.02%	3.39%
SANTA CLARA	600	584	553	581	607	553	450	463	-1.05%	-5.10%	-3.27%
SANTA CRUZ	73	84	76	73	74	79	82	85	-0.29%	4.35%	2.34%
SHASTA	45	38	38	72	108	121	67	70	19.36%	-0.66%	7.70%
SIERRA	0	0	0	0	0	0	0	0	na	na	na
SISKIYOU	0	0	0	0	0	0	0	0	na	na	na
SOLANO	197	176	183	185	188	192	150	155	-1.90%	-4.11%	-3.03%
SONOMA	111	115	113	123	131	112	96	99	3.54%	-4.84%	-1.54%
STANISLAUS	178	184	210	233	238	249	172	179	10.29%	-5.76%	0.10%
SUTTER	24	30	24	21	27	26	20	21	-3.44%	-0.51%	-1.74%
TEHAMA	18	22	32	27	28	26	19	20	14.84%	-6.44%	1.04%
TRINITY	0	0	0	0	0	0	0	0	0.37%	25.42%	14.85%
TULARE	86	77	91	97	116	103	117	119	4.49%	5.46%	5.46%
TUOLUMNE	0	0	0	0	0	0	0	0	na	na	na
VENTURA	210	196	230	254	275	275	350	351	7.09%	9.51%	9.63%
YOLO	78	78	90	93	103	104	73	76	6.47%	-4.54%	-0.32%
YUBA	13	14	14	14	15	14	12	12	2.44%	-2.98%	-0.78%
Total	11,748	11,088	11,077	11,528	11,832	11,985	12,845	12,978	-0.62%	3.14%	1.49%

TABLE C6 (continued)
STAFFS OUTLOOK FOR CALIFORNIA'S COUNTIES
NATURAL GAS END-USE CONSUMPTION (Millions Therms)

	End-Use Consumption Forecast										Growth Rates
COUNTY	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1997-07
ALAMEDA	491	495	500	504	507	510	512	515	517	520	0.53%
ALPINE	0	0	0	0	0	0	0	0	0	0	na
AMADOR	7	7	8	8	8	8	8	8	8	8	1.00%
BUTTE	41	42	42	43	43	43	43	44	44	44	0.58%
CALAVERAS	2	2	2	2	2	2	2	2	2	2	-0.23%
COLUSA	14	15	15	15	15	15	15	15	16	16	0.34%
CONTRA COSTA	1,156	1,181	1,210	1,227	1,236	1,249	1,260	1,268	1,277	1,290	1.23%
DEL NORTE	0	0	0	0	0	0	0	0	0	0	na
EL DORADO	6	6	6	6	6	6	6	6	6	6	0.73%
FRESNO	294	297	301	303	305	307	308	310	311	313	0.69%
GLENN	12	13	13	13	13	13	13	14	14	14	0.87%
HUMBOLDT	72	73	73	74	75	75	76	76	76	77	0.28%
IMPERIAL	50	50	51	51	51	51	51	51	51	51	0.51%
INYO	0	0	0	0	0	0	0	0	0	0	na
KERN	801	808	812	814	814	814	813	811	812	815	1.35%
KINGS	41	41	42	42	42	42	42	42	42	43	0.36%
LAKE	0	0	0	0	0	0	0	0	0	0	na
LASSEN	0	12	55	55	54	54	55	54	54	54	na
LOS ANGELES	4,393	4,434	4,463	4,501	4,526	4,552	4,568	4,580	4,601	4,626	0.76%
MADERA	44	45	46	47	47	48	48	48	49	49	1.04%
MARIN	89	89	89	90	90	90	90	91	91	91	0.19%
MARIPOSA	0	0	0	0	0	0	0	0	0	0	na
MENDOCINO	32	33	33	34	34	34	35	35	35	35	0.58%
MERCED	83	85	87	88	88	89	90	91	91	92	0.92%
MODOC	0	0	5	5	5	5	5	5	5	5	na
MONO	0	0	0	0	0	0	0	0	0	0	na
MONTEREY	129	130	132	133	134	135	135	136	137	138	0.42%
NAPA	33	33	33	34	34	34	34	35	35	35	0.83%
NEVADA	15	15	15	15	15	15	15	16	16	16	0.30%
ORANGE	753	760	766	776	783	791	797	802	808	813	1.09%
PLACER	57	57	58	59	59	59	60	60	61	61	1.01%
PLUMAS	0	0	0	0	0	0	0	0	0	0	na
RIVERSIDE	362	367	372	379	385	390	396	404	412	421	2.11%
SACRAMENTO	349	353	358	363	367	372	376	380	385	389	1.31%
SAN BENITO	16	16	17	17	17	17	17	17	18	18	0.91%
SAN BERNARDINO	650	660	668	678	684	691	699	709	720	732	1.67%
SAN DIEGO	605	613	621	629	637	645	653	661	669	677	1.44%
SAN FRANCISCO	291	292	293	294	295	296	297	298	299	299	0.06%
SAN JOAQUIN	229	233	237	240	242	244	246	247	249	251	1.03%
SAN LUIS OBISPO	66	67	67	68	68	68	69	69	69	69	0.62%
SAN MATEO	231	232	233	234	235	235	236	237	238	238	0.19%
SANTA BARBARA	153	154	155	156	157	157	158	158	159	159	0.53%
SANTA CLARA	465	470	476	481	485	489	493	496	500	504	0.88%
SANTA CRUZ	82	82	83	83	83	84	84	84	84	84	-0.12%
SHASTA	69	71	72	73	74	74	75	75	76	77	0.95%
SIERRA	0	0	0	0	0	0	0	0	0	0	na
SISKIYOU	0	0	0	0	0	0	0	0	0	0	na
SOLANO	156	159	162	163	164	166	167	168	169	171	1.02%
SONOMA	99	100	101	101	102	103	103	104	105	105	0.64%
STANISLAUS	176	179	183	185	186	188	189	190	191	193	0.75%
SUTTER	20	21	21	21	21	21	21	22	22	22	0.56%
TEHAMA	20	20	21	21	21	21	21	22	22	22	1.08%
TRINITY	0	0	0	0	0	0	0	0	0	0	-0.34%
TULARE	119	121	121	122	123	123	124	124	125	125	0.57%
TUOLUMNE	0	0	0	0	0	0	0	0	0	0	na
VENTURA	357	360	361	363	364	365	365	365	366	367	0.46%
YOLO	76	77	78	79	80	80	81	81	82	83	0.86%
YUBA	12	12	12	12	12	12	12	12	12	13	0.43%
Total	13,218	13,381	13,569	13,698	13,788	13,884	13,965	14,036	14,129	14,235	0.97%